

WE CALL IT
HUMAN NATURE

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BY

PAUL GRABBE

Worked out in Cooperation with

GARDNER MURPHY



HARPER & BROTHERS, PUBLISHERS

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TO
L. H. G.

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My sincerest thanks to
Myrtle Sheldon who turned my rough sketches
into delightful drawings and to Margaret Brewster
who executed my diagrams with imaginative skill.

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How This Book Came To Be Written

Psychology has worked harder at finding out about human nature than it has at making the results intelligible in non-technical terms.

So when I met Paul Grabbe in 1934 and saw in an hour's inspection of his material that he had worked out a vital and practical way of teaching I got very much excited. His "new diagram method" of teaching *foreign languages* convinced me that he could find a vital and effective way to teach any subject. He did indeed develop a method for the teaching of such a very different subject as *harmony*. I vividly recall his starting point. In a period of bumming around he had stopped off penniless in Denver. To get a job as streetcar conductor he had to learn the contents of a 40-page bulletin about things to see in the city. He found, after arranging the material logically, meaningfully, that he had the bulletin cold. But it wasn't just a superficial memory trick. It was an articulate method of getting real coherence, real unified meaning out of a thousand separate details.

I wanted this method for myself and for my students, and I began to give it careful study.

Paul Grabbe has grown and learned in the five years that have gone under the mill. He became in time ready to venture the use of his method in the interpretation of psychology.

Not having had the opportunity to give the subject a lifetime's study, he naturally turned to a college teacher to help him. He has in fact drawn freely from some of my own efforts, notably *A Briefer General Psychology*. But a moment's comparison will convince the reader that whereas my book is just a college text, his is not only an exceedingly readable book for the general reader, but an ingenious and novel form of presenting scientific subject matter.

We have worked to make this book authentic, factual, accurate. Hundreds of sentences have been rewritten over and over again because of slight shadings

that might conceivably lead to some misunderstanding. We have indeed not limited ourselves to those experimental facts which every laboratory has verified, but we have constantly tried to make clear the difference between an established fact and a reasonable guess and when we have offered our own views, we have tried to phrase them so as to permit the reader to see how much leeway of interpretation the evidence permits. The reader who hungers for further factual information and the sources from which it is derived will find many references indicated to which he may turn.

I say "we," for, though Paul has done most of the work and the final result is wholly his own, I have stood admiringly at his side wondering at his penetration, his skill, and his humor.

GARDNER MURPHY

Columbia University

Morningside Heights, New York

July 1939

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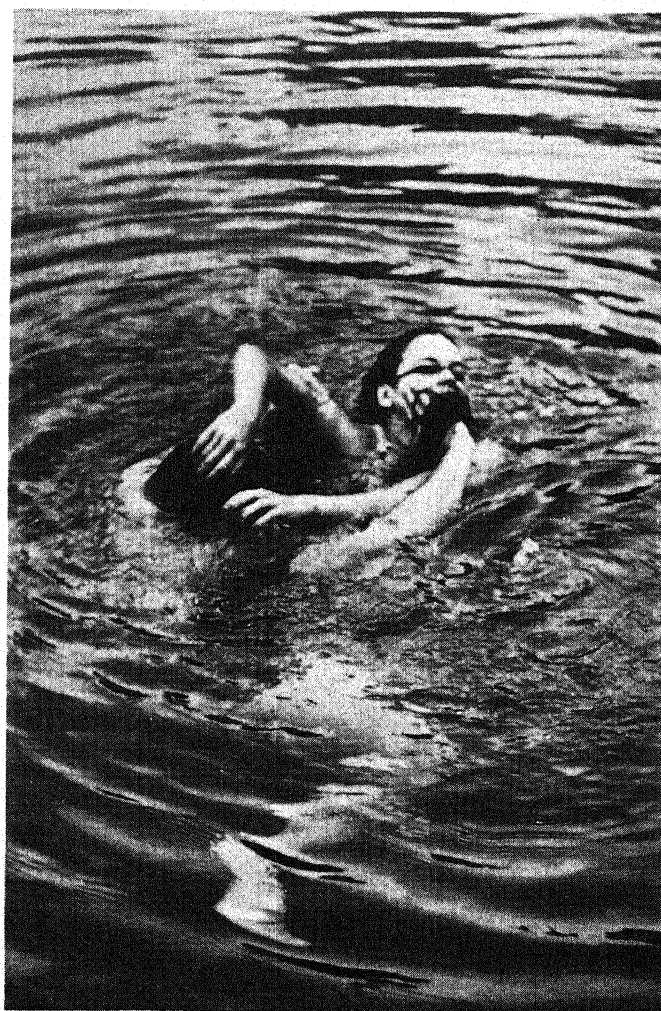
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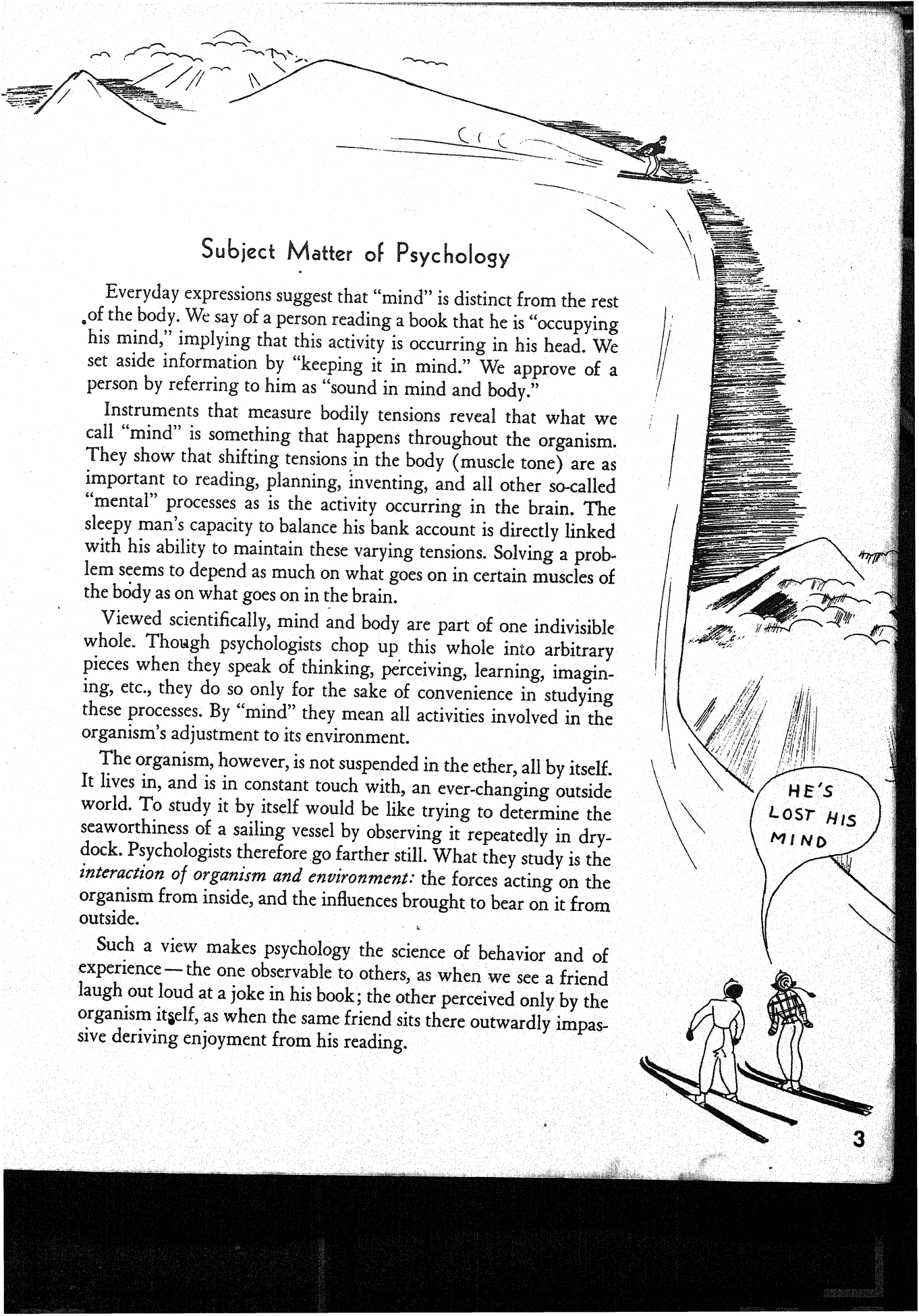
OUR MAINSPRINGS
OF ACTION

Struggling
to Survive?

(see page 14)

Walter Nase





Subject Matter of Psychology

Everyday expressions suggest that "mind" is distinct from the rest of the body. We say of a person reading a book that he is "occupying his mind," implying that this activity is occurring in his head. We set aside information by "keeping it in mind." We approve of a person by referring to him as "sound in mind and body."

Instruments that measure bodily tensions reveal that what we call "mind" is something that happens throughout the organism. They show that shifting tensions in the body (muscle tone) are as important to reading, planning, inventing, and all other so-called "mental" processes as is the activity occurring in the brain. The sleepy man's capacity to balance his bank account is directly linked with his ability to maintain these varying tensions. Solving a problem seems to depend as much on what goes on in certain muscles of the body as on what goes on in the brain.

Viewed scientifically, mind and body are part of one indivisible whole. Though psychologists chop up this whole into arbitrary pieces when they speak of thinking, perceiving, learning, imagining, etc., they do so only for the sake of convenience in studying these processes. By "mind" they mean all activities involved in the organism's adjustment to its environment.

The organism, however, is not suspended in the ether, all by itself. It lives in, and is in constant touch with, an ever-changing outside world. To study it by itself would be like trying to determine the seaworthiness of a sailing vessel by observing it repeatedly in dry-dock. Psychologists therefore go farther still. What they study is the *interaction of organism and environment*: the forces acting on the organism from inside, and the influences brought to bear on it from outside.

Such a view makes psychology the science of behavior and of experience—the one observable to others, as when we see a friend laugh out loud at a joke in his book; the other perceived only by the organism itself, as when the same friend sits there outwardly impassive deriving enjoyment from his reading.

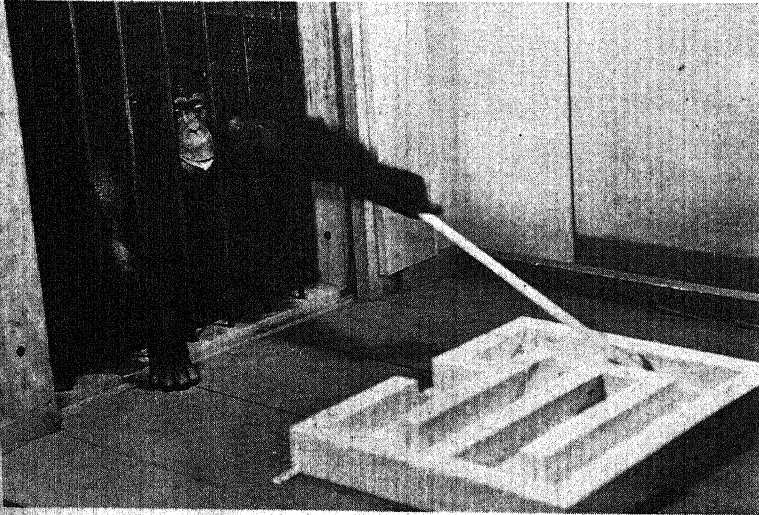
HE'S
LOST HIS
MIND



W. Odenheimer. Courtesy The Bank St. Schools

Child Psychology studies the behavior of the human organism in its pre-adult stages. Devotes special attention to the behavior of the newborn and to the manner in which behavior is affected by growth and learning. Research in this field reveals the child's real needs and eventually finds its way into school and home, bringing about greater understanding in the handling of children by their parents and teachers.

Courtesy T. A. Jackson and Yale Lab. of Compar. Psychobiology



Animal Psychology studies the emotions, learning ability, and intelligence of animals. Seeks to determine what general principles of behavior apply to all animals — from the white rat's methods in finding its food to the means of communication among apes. Is closely related to biology.

Research in this field supplements existing information about human nature, suggesting problems which may later be tested directly on man. Its contributions to the understanding of motivation and learning are the more valuable for the striking similarities often revealed in these functions between animals and human beings.

The Sources of Psychological Information

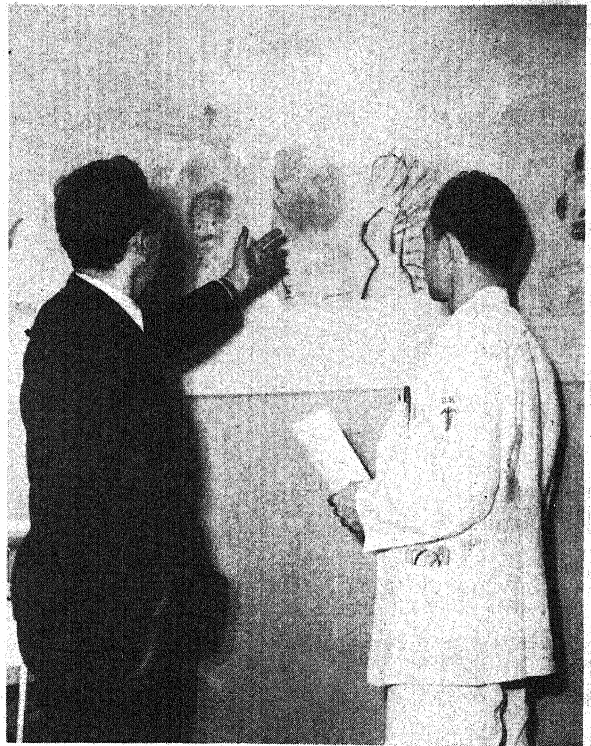
Many sources of information are open to psychologists in their study of human nature. But it is on three avenues of inquiry, each of which yields a different kind of information, that they rely primarily to obtain the knowledge on which to base their theories and conclusions. These three different types of information are:

Behavior data: arrived at through direct observation of the subject by the experimenter; provides a record of the organism's behavior.

Introspective data: arrived at through what the subject is able to report to the experimenter regarding his thoughts and feelings; provides a record of what goes on inside the organism.

Physiological data: arrived at through acquaintance with physiology; provides a general knowledge of every subdivision of the body in relation to the problem investigated.

A difference of opinion exists among psychologists as to the relative value of behavior as against introspective data. Some, mistrusting the reliability of introspection, depend chiefly on information gained through direct observation. Others, disagreeing profoundly, regard introspective data as the more important.



Elinor Mayer. Courtesy Life Magazine

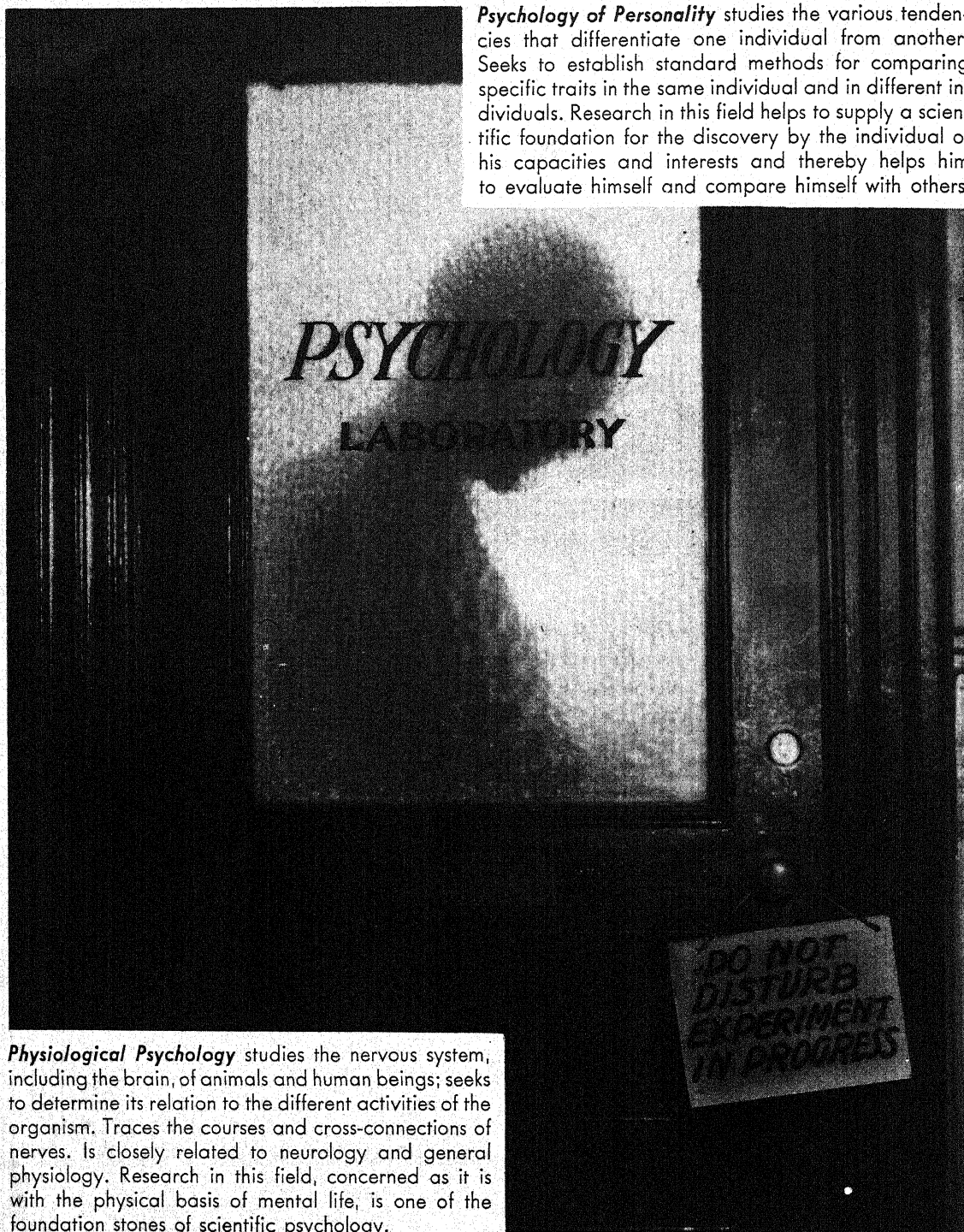
Abnormal Psychology studies persons who are mentally disturbed or defective. Traces the causes of these deviations, relating them to conditions in daily life. Research in this field throws light on the reasons for such disorders and leads to an understanding of mental disturbances which may in many cases prevent their occurrence. Psychiatry, which treats the mentally ill, is its companion field in medicine.

Rudolf H. Hoffmann

Social Psychology studies human beings in their interactions with one another. Analyzes group behavior and the influence of social conditions on behavior. Is closely related to sociology but differs from it in devoting attention not so much to the events which condition daily life as to the people participating in these events. Research in this field yields information regarding the effects on man of his social environment; the difficulties for adjustment encountered by the individual in present day society; and the social conditions and pressures that lead him to succeed or fail in making the proper adjustment.



Psychology of Personality studies the various tendencies that differentiate one individual from another. Seeks to establish standard methods for comparing specific traits in the same individual and in different individuals. Research in this field helps to supply a scientific foundation for the discovery by the individual of his capacities and interests and thereby helps him to evaluate himself and compare himself with others.



Physiological Psychology studies the nervous system, including the brain, of animals and human beings; seeks to determine its relation to the different activities of the organism. Traces the courses and cross-connections of nerves. Is closely related to neurology and general physiology. Research in this field, concerned as it is with the physical basis of mental life, is one of the foundation stones of scientific psychology.

P. Lamar



Courtesy Bell & Howell Company

Applied Psychology draws freely on all of the other fields in considering how the materials of psychology can be made useful in daily life. It embraces "vocational psychology" which helps people select a life work, and the term may be used to include "educational psychology" which concerns itself with classroom problems of teaching and learning. In industry and business it deals mainly with such questions as personnel hiring, efficiency, reasons for accidents, advertising effectiveness, etc., etc. Many other problems are handled, for applied psychology has gone far in the last decade, and is not just a bag of tricks to be administered at a moment's notice. Vocational psychology, for example, entails much more than just a "battery of tests" administered to measure manual skill or linguistic facility. Rather, it involves a very thorough study of the various types of jobs available and the traits they call for. And this is followed by extensive

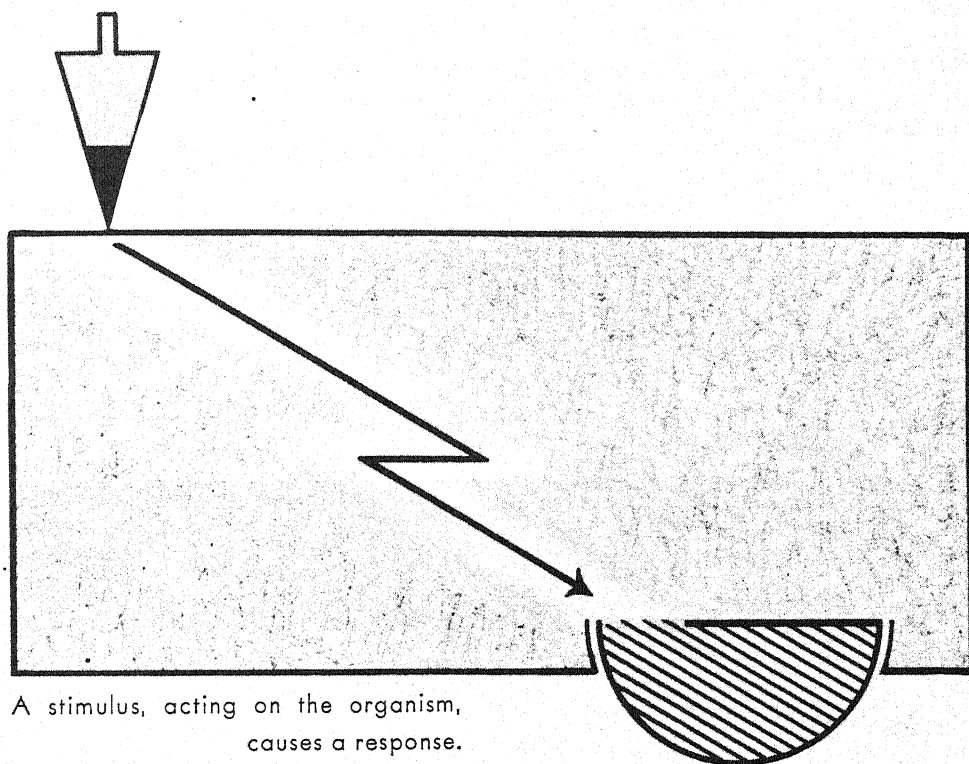
interviews and a study of the life history of the individual applicant. But perhaps the most interesting of all current preoccupations of applied psychology is that of highway research. This research involves an elaborate program—such as is carried on at Harvard, for example—relating to the proper training of traffic officers; the study of the individual characteristics of drivers with high and drivers with low accident records; the study of types of intersections and curves, and of bridge approaches, which expedite or interfere with free and safe estimates of speed, etc., etc. In other words, with eyes wide open to a complex range of human factors of observation, motivation, thought, and muscular reaction, applied psychology has here stepped in to assist materially in an enterprise of human engineering. To the solution of many other such problems of everyday life, applied psychology brings its knowledge of the way in which the human animal is built; how it is apt to behave in varying circumstances.



A stimulus, acting on the organism, causes a response.

Oldrich Kindl

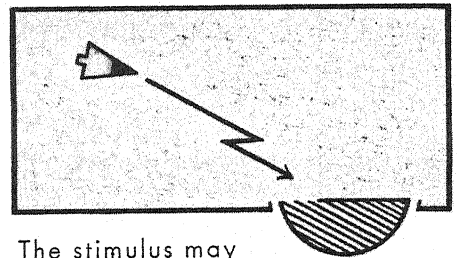
The Stimulus-Response – A Preliminary Interpretation of Behavior



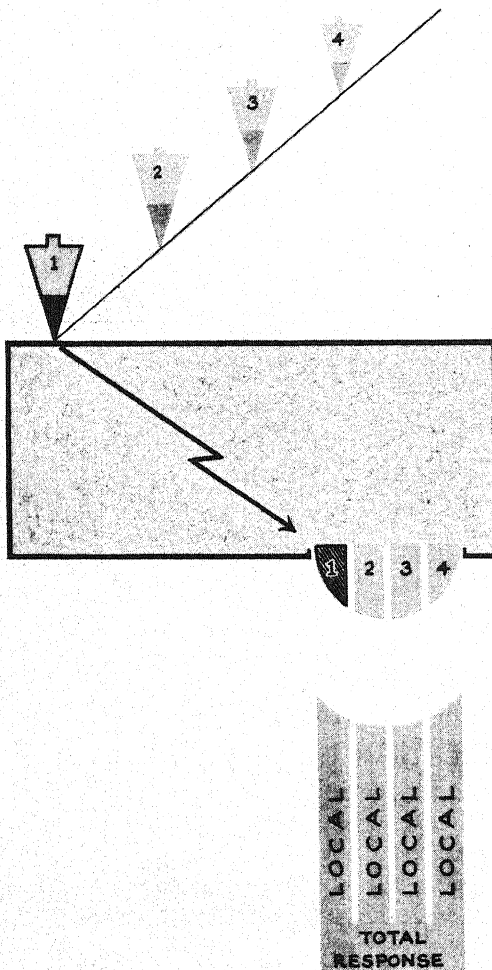
One of the working principles used in psychology is the stimulus-response formula. According to this formula behavior is caused. Every activity, no matter how slight, can be traced to a rousing agency that is affecting the organism from within or from without. This rousing agency, or *stimulus*, may be the tickling produced by a fly, the sight of a friend, a pain in the tooth. Whatever it is, there must be some stimulus present before the organism will act. It is for this reason that our actions are called *responses*. For when we swat the fly, smile at our friend, or phone the dentist for an appointment, what we are

doing is responding in different ways to different stimuli acting upon us.

The term "response" is a general term. It may mean a single unit of behavior, like swallowing. Or it may embrace more complicated behavior, like eating, which in addition to swallowing involves taking food into one's mouth, secreting saliva, and chewing. To distinguish these, the term *total response* and *local response* are used.



The stimulus may also act from within as in a toothache.



The former refers to the whole response pattern; the latter, to a single phase of this whole pattern.

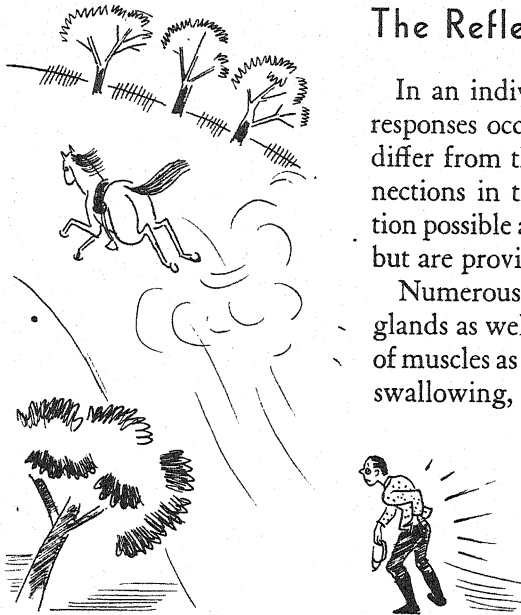
Thus, striking a match, which involves a single operation, is a local response. But making a phone call requires several local responses and so is a total response. For the same reason the act of jumping out of bed, though a simple behavior unit, is nevertheless a total response since it can be broken into even simpler units: grasping the top of the blanket and sheet; throwing them back; pulling up one's legs; using one arm as a pivot; swinging one's feet to the floor, etc., etc.—each one of which is a local response.

Several stimuli, acting one after another, usually participate in bringing about a total response. Thus, the stimulus for reaching and grasping the instrument in making a phone call may be a thought, but the stimulus for dialing is the instrument itself, while the stimulus for speaking is the sound of a voice on the other end of the wire. This distinction between different stimuli—those acting now and those not yet acting—is indicated on the diagrams; the former are outlined, the latter, shaded.

The Reflex — an Innate Local Response—

In an individual's day-by-day routine thousands of local responses occur. Of these a certain number, called reflexes, differ from the rest. The reason they differ is that the connections in the nervous system which make their production possible are not acquired during the individual's lifetime but are provided by nature.

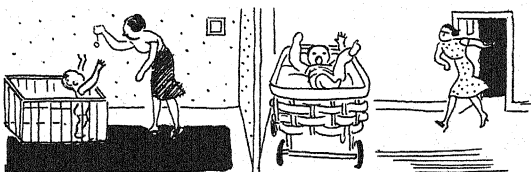
Numerous reflexes exist, involving the operation of many glands as well as the flexion and extension of a great variety of muscles as in crying, starting, sucking, breathing, babbling, swallowing, sneezing, coughing, moving head or trunk, jerking hand or foot, etc. Since these reflexes are provided by nature, insuring prompt and effective action in response to elementary needs and dangers, they have certain common elements:



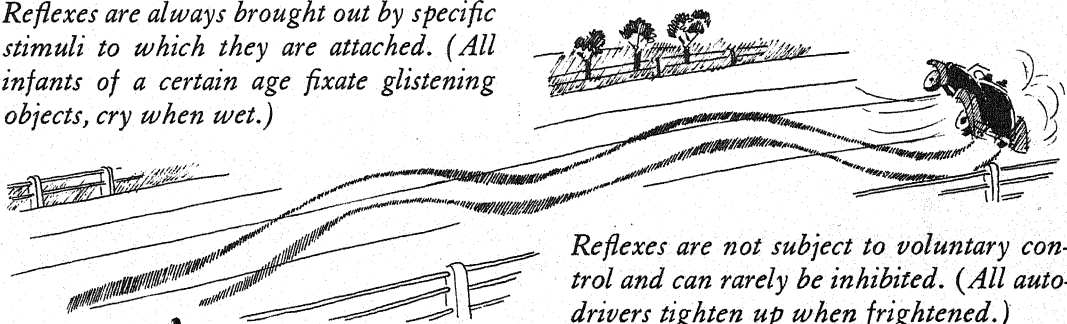
Reflexes are mostly connected with locomotion, the maintenance of posture, and the avoidance of injurious stimuli. (All humans stand erect, limp when hurt in the leg.)



Reflexes are to a large extent fixed and uniform for all members of a given species, whatever the breed or strain. (All dogs scratch under identical stimulation.)



Reflexes are always brought out by specific stimuli to which they are attached. (All infants of a certain age fixate glistening objects, cry when wet.)



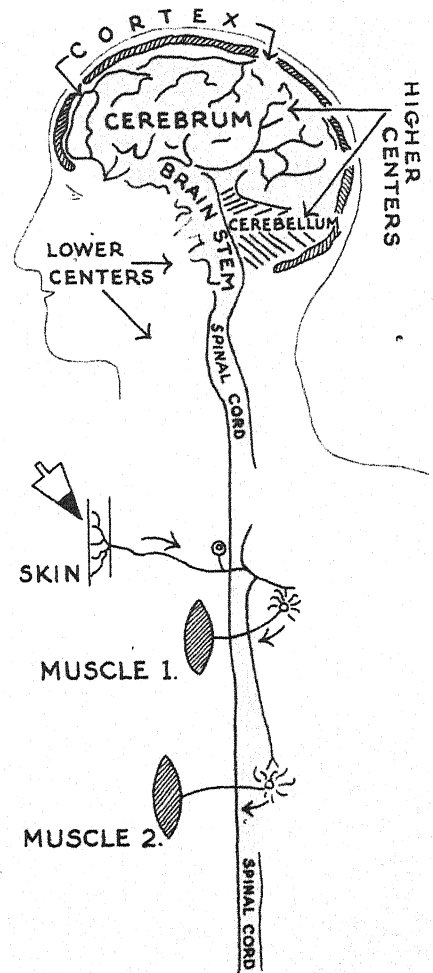
Reflexes are not subject to voluntary control and can rarely be inhibited. (All auto-drivers tighten up when frightened.)

Mechanism of the Reflex

Though we take the highly complicated nature of our nervous system more or less for granted, it took millions of years of evolutionary development to produce it. Early in this evolutionary sequence there appeared a primitive net-like structure through which nervous impulses spread in all directions, causing slow and uncoordinated movement in all parts of the organism at once—as in the jellyfish. The spinal cord, providing the necessary connections for reflex action, was a much later development.

The brain which appeared still later in evolutionary development was added to this already smoothly functioning though as yet still primitive nervous system. It grew out of the end of the spinal cord, first as a mere swelling, the *brain stem*, then as a more and more complicated structure which today includes the brain's so-called "higher centers": the *cerebrum* and *cerebellum*. The *cortex*, which is the outermost layer of these (see drawing), has continued to develop, and is believed to be the seat of some of our most complex activities.

It is in terms of this evolutionary sequence that our reflexes are to be understood. Because they appeared ahead of the development of the brain, most simple reflexes, especially those connected with the movement of the limbs, became established in relation to nerve centers in the spinal cord, their function fully defined without the intermediary of the brain. Their operation, therefore, was dependent not on the brain but on nerve fibers running to and from and inside the spinal cord. It is for this reason that the location of the structures that produce reflexes has so much to do with the seemingly automatic and uncontrollable nature of these responses. For voluntary control is a function of our higher



As shown above, reflex action involves a sense organ on which the stimulus acts. From this point of stimulation impulses are discharged and travel along ingoing nerve fibers to the spinal cord. There the impulses may pass at once to outgoing fibers, and so to a muscle, causing it to contract, or to a gland, causing it to secrete. Or they may first pass along up-and-down fibers in the spinal cord and thus stimulate a complex pattern of muscles or glands simultaneously. This circuit—from sense organ to muscle or gland—is known as a "reflex arc."



Bill Bartlett

A case of reflex action, so quick as to be irrepressible, is the patient's sudden twinge in the dentist's chair.

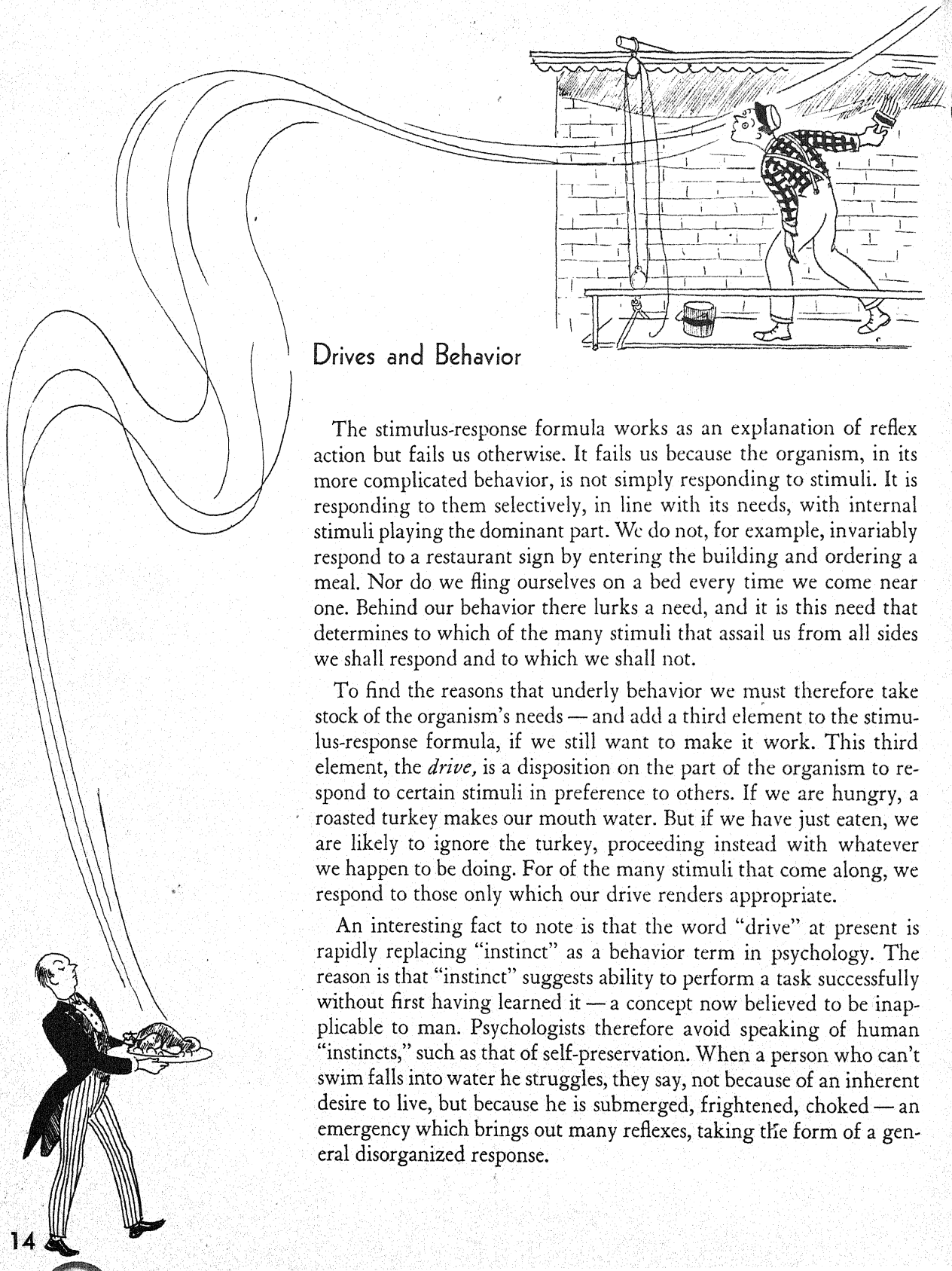
Also reflex in nature are the rapid muscular adjustments which enable one to keep his balance in slippery weather.

centers. In order to reach this part of the brain, a message from a sense organ must first pass through the lower centers. The time lost in this fashion may involve only a split second, but this may suffice to render the return message ineffective—as happens, for instance, when a thunderclap or other loud and sudden noise causes a person to cut himself while shaving through a reflex jerk of the arm so rapid as to be impossible to inhibit.

Cases similar to this are many. Yet even the most uncontrollable of our reflexes involve neural machinery far in excess of mere local connections running to and from and inside the spinal cord. It would therefore be a mistake to think of reflex action as entirely independent of our other activities, for this it is not. Even the dilation of the pupil of the eye is not simply a matter of light acting on the retina, for it varies in persons experiencing strong emotion. Despite its seeming independence, reflex action, along with all other behavior, is the behavior of the whole organism and not of just part of it, as might appear.

Wide World Photos



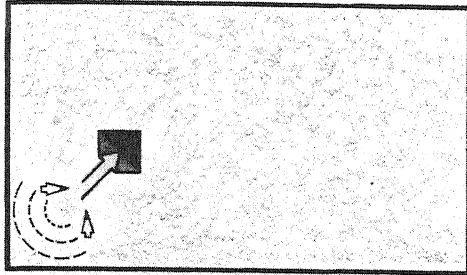


Drives and Behavior

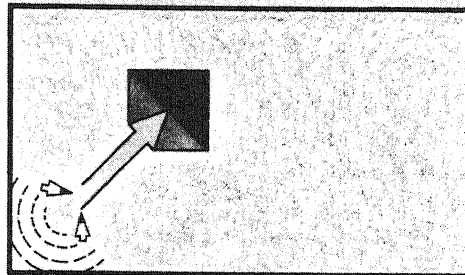
The stimulus-response formula works as an explanation of reflex action but fails us otherwise. It fails us because the organism, in its more complicated behavior, is not simply responding to stimuli. It is responding to them selectively, in line with its needs, with internal stimuli playing the dominant part. We do not, for example, invariably respond to a restaurant sign by entering the building and ordering a meal. Nor do we fling ourselves on a bed every time we come near one. Behind our behavior there lurks a need, and it is this need that determines to which of the many stimuli that assail us from all sides we shall respond and to which we shall not.

To find the reasons that underly behavior we must therefore take stock of the organism's needs — and add a third element to the stimulus-response formula, if we still want to make it work. This third element, the *drive*, is a disposition on the part of the organism to respond to certain stimuli in preference to others. If we are hungry, a roasted turkey makes our mouth water. But if we have just eaten, we are likely to ignore the turkey, proceeding instead with whatever we happen to be doing. For of the many stimuli that come along, we respond to those only which our drive renders appropriate.

An interesting fact to note is that the word "drive" at present is rapidly replacing "instinct" as a behavior term in psychology. The reason is that "instinct" suggests ability to perform a task successfully without first having learned it — a concept now believed to be inapplicable to man. Psychologists therefore avoid speaking of human "instincts," such as that of self-preservation. When a person who can't swim falls into water he struggles, they say, not because of an inherent desire to live, but because he is submerged, frightened, choked — an emergency which brings out many reflexes, taking the form of a general disorganized response.



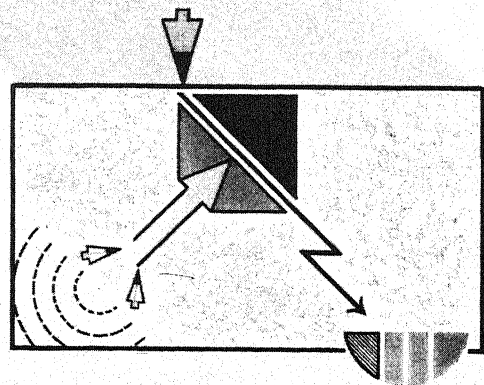
1. A drive is a condition of internal bodily tension which arises when the organism is deprived for a certain length of time of something for which it has a need — food, or exercise, or music. This condition generates sensations which cause discomfort, prodding the organism to seek relief. For this reason psychologists frequently describe the drive also as an action tendency kept going by internal bodily conditions.



2. As the drive grows, bodily sensations and the discomfort caused by them increase. The organism becomes more and more restless, and presently it has to do something in response to the growing internal pressure.

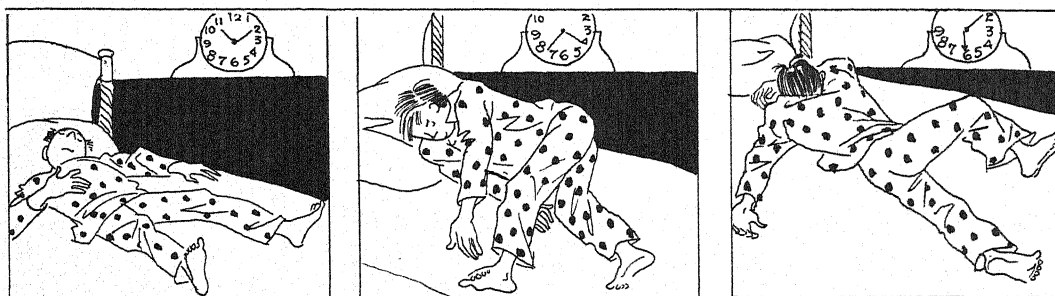
What the organism does depends largely on experience. Even such fundamental drives as hunger and sex lead to mere restlessness unless the organism has learned which stimuli will bring appeasement.

3. When the drive reaches sufficient proportions it is able to crowd out all other sensations competing for control over the organism. At this point action occurs. On the basis of experience as to which particular stimuli are the ones that bring relief, the organism seeks out such stimuli and responds to them. Thus, the tendency to action in a drive is native; the direction this action will take is acquired.



The Visceral Drives depend on

Of our many drives, some of the most important are those which are kept going by conditions in the *viscera* or vital organs. Best known in this group are hunger, thirst, breathing (air getting), sex, and temperature regulation; also physical fatigue and physical pain, which are frequently included under the same heading. Since most of these drives represent tensions, causing discomfort that cannot be ignored, they play a vital part in insuring continued existence. For they compel the organism to meet, as they arise, the various needs connected with its normal bodily functions. As such, many of these drives have a characteristic "rhythmic" quality. They come and go in cycles—are, in other words, apt to appear at regular intervals.



It has been noted that a person, while asleep, displays fairly regular intervals of restlessness. The restlessness lasts a short

while; then it vanishes; then it reappears. The reason for this is now fairly well understood. It has been traced experimentally to

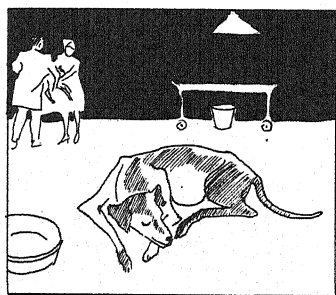
different causes of which one of the most important is the stomach's tendency to renewed activity at definite intervals.

This cyclic quality is related to the following facts. The supply of things needed by the body does not remain at all times the same. Some substances are continuously being used up, causing shortages; others are being accumulated, causing surpluses. During the hours that we go without water, for instance, we are developing a water deficit. Thirst makes us aware of this deficit. And thirst is experienced as soon as the supply of water in the body runs low enough—which means at intervals that are more or less regular, for the body normally uses up water at a fairly even rate.

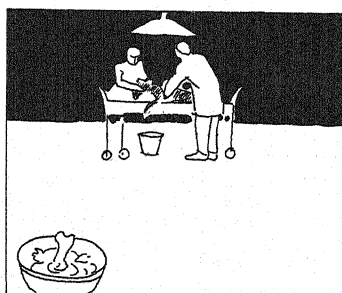
There is yet another, secondary, reason which causes many of our drives to appear at regular intervals. This reason is that a "rhythm," once established, may be kept going through habit. Thus a man, though sufficiently overweight not to require nourishment, will nevertheless

conditions in the vital organs

get miserably hungry if his lunch hour is passed. Responsible for this is the nervous system which, having become used to the man's hours of eating, causes hunger sensations to appear at the stated intervals. Our drives may, in this fashion, not only be acquired and kept going "artificially" (as witness the Englishman's four o'clock craving for tea). They may be modified in their time of appearance—all through "training" of the nervous system. As an example of this flexibility, consider the newborn whose stomach (and voice) keep abreast of every change of feeding schedule with a minimum of time needed for each readjustment. Such modifications can, of course, occur only within the framework of the original need; and this, in part, is a question of body chemistry.



Though we become aware of hunger through sensations from the stomach, the cause of our hunger does not lie in the stom-



ach but in a general bodily state. Experimental study shows that if a dog which has just eaten is injected with blood drawn from a



starving dog, its stomach will soon start contracting, and the animal, though bursting with food, will recommence eating.

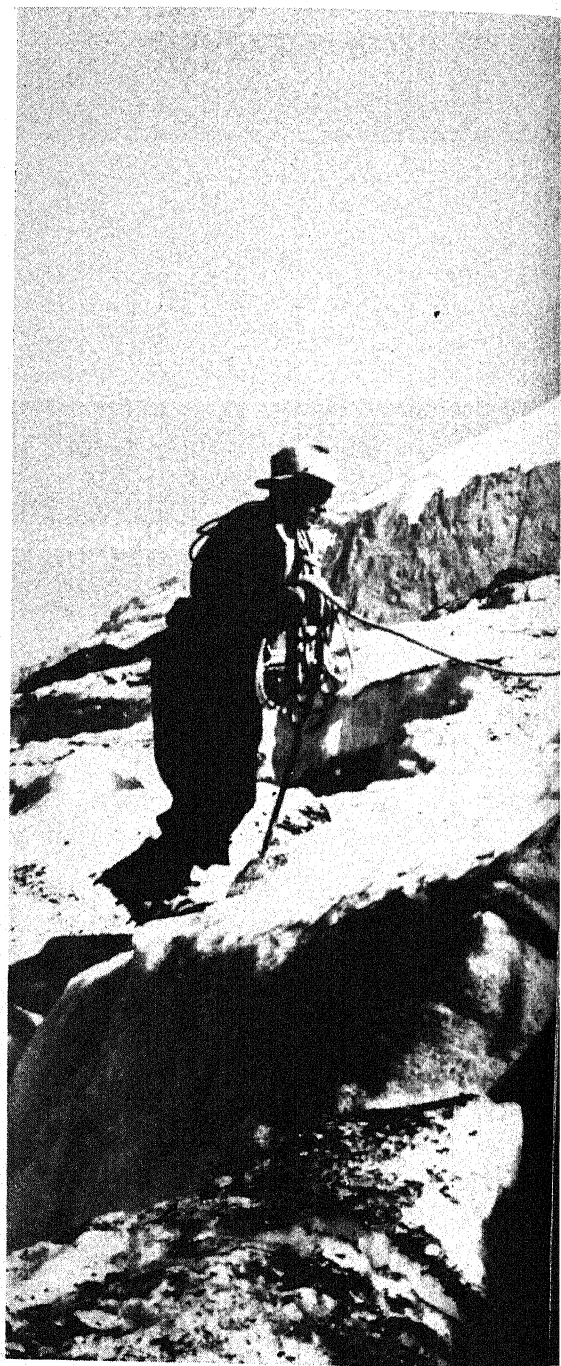
This chemical nature of many of our visceral drives is their other important distinguishing mark. To find the cause of hunger, for instance, we must retrace a series of events which start with the fact that our bodily tissues, in order to function, use up blood sugar and other substances. When these run low, the tissues become "hungry." They start liberating into the blood minute quantities of material the effect of which is to induce chemical changes. These changes act on the nervous system, and the latter, in turn, acts on the muscles of the stomach, inducing their contraction. We then experience the localized sensations we call hunger. This explains why we associate hunger and most other visceral drives solely with specific parts of the body instead of thinking of them as needs of the organism as a whole, which is what they really are.

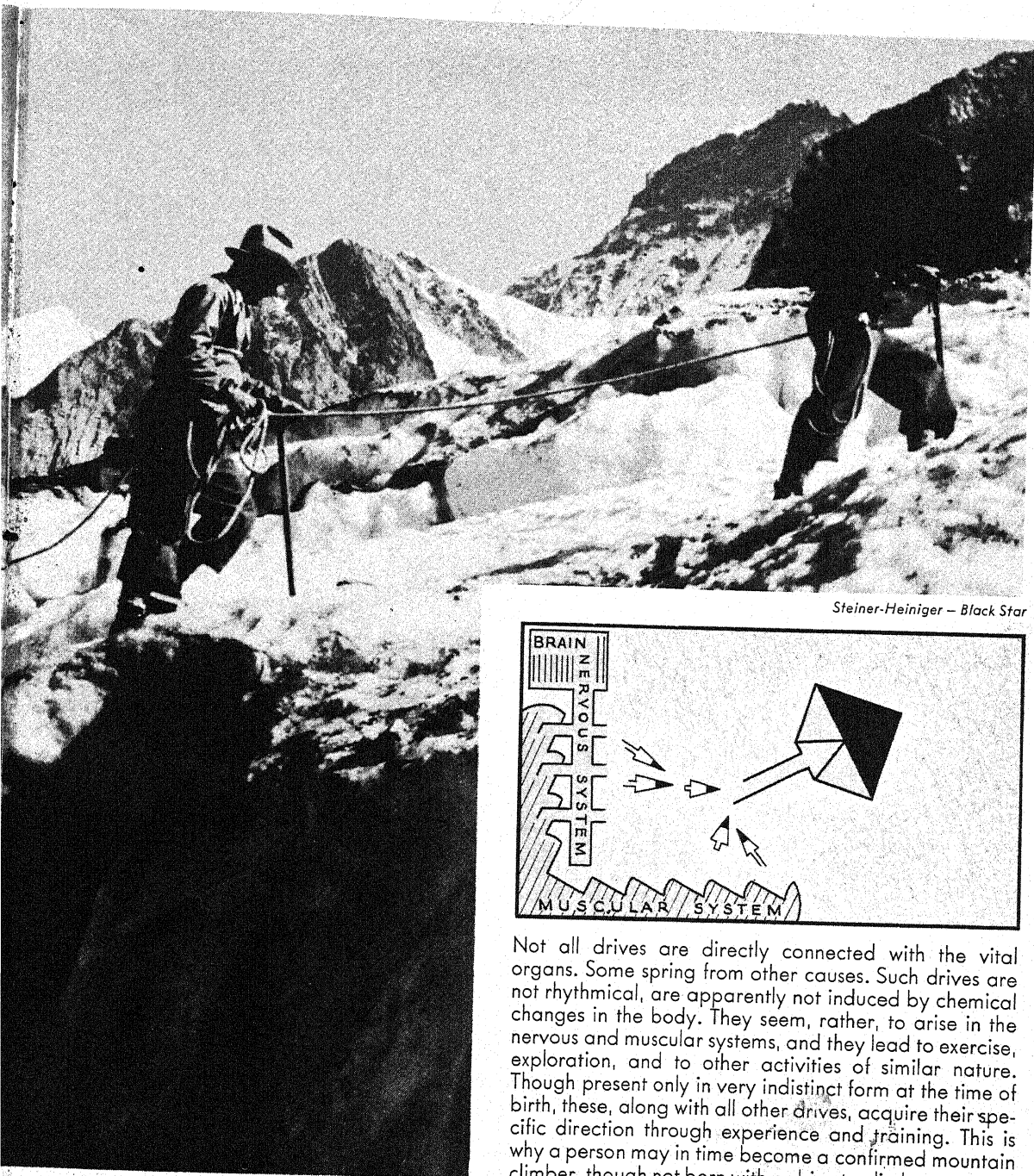
Activity Drives depend on other factors

The universality of the need for physical activity is unquestioned. We must move to live, and movement may be enjoyable for its own sake. The walks people take to stretch their limbs, their love of dancing, the many sports they engage in for the pleasure associated with coordinated movement—these are all based in part upon a drive to activity.

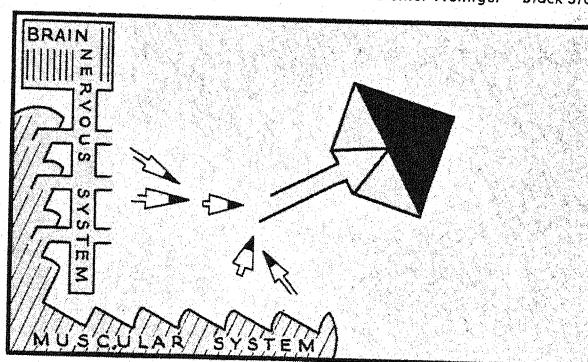
An allied drive is *exploration*—a tendency of the organism to investigate places and manipulate objects that are unfamiliar. In man this drive extends to the manipulation of ideas and is preceded by the subjective experience known as *curiosity*. This arises when a response is blocked before it is completed—as when a door opens and shuts letting us overhear but a few words of a conversation. It follows that what arouses curiosity is not the unknown but that which is partly known. ✓

Still another drive is *perseveration*, or the tendency of an activity, once started, to keep going—as in the case of the person who goes on humming the same tune and can't stop. As a rule, this drive arises when an experience has been vivid; but vividness is not an indispensable condition (as seen from most people's tendency to keep eating peanuts, once started). The explanation would seem to lie in a general disposition of the nervous system, leading us, when within reach of a stimulus to which we have been responding, to act in a manner that would give us more of the same stimulus. This certainly applies to most everyday stimuli, barring only those that are disturbing to us. It provides a clue to "playing" activities and to the delight most intelligent animals in general seem to take in the repetition of activity over and over again just for its own sake.





Steiner-Heiniger — Black Star

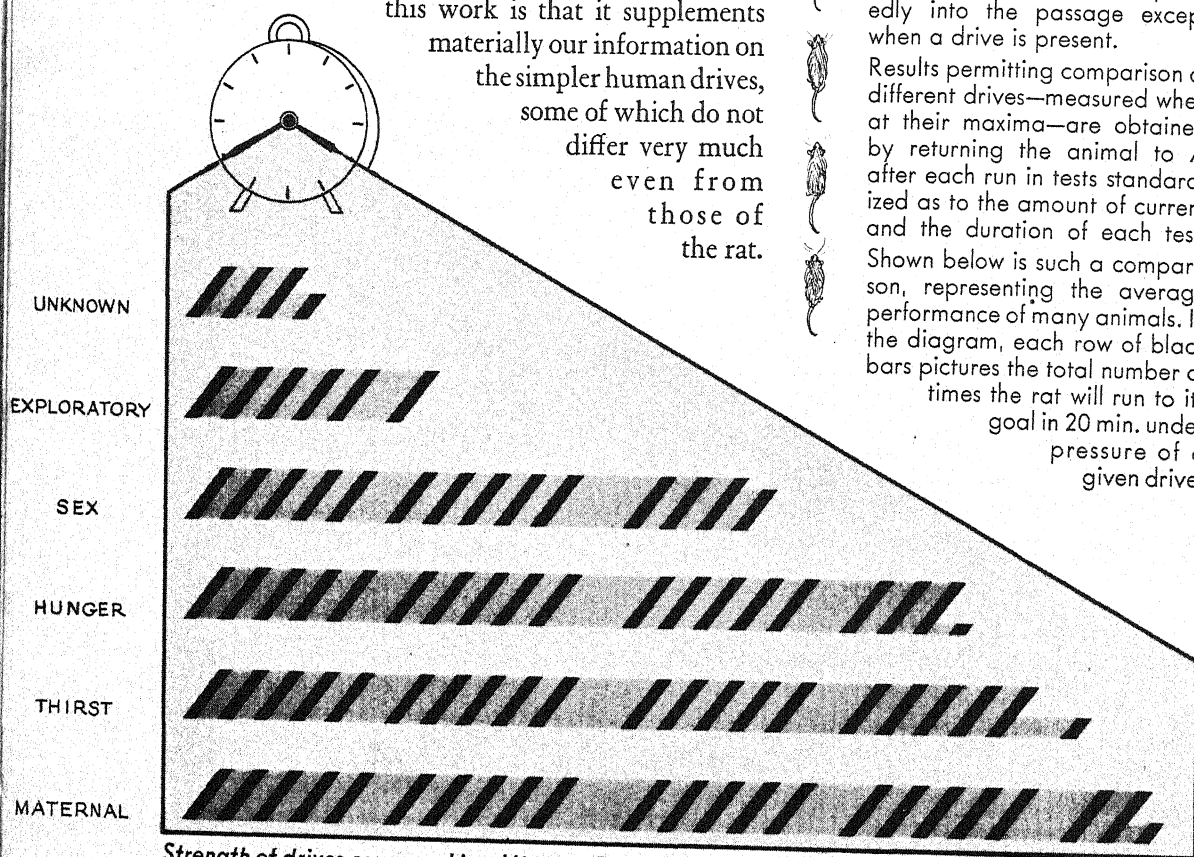


Not all drives are directly connected with the vital organs. Some spring from other causes. Such drives are not rhythmical, are apparently not induced by chemical changes in the body. They seem, rather, to arise in the nervous and muscular systems, and they lead to exercise, exploration, and to other activities of similar nature. Though present only in very indistinct form at the time of birth, these, along with all other drives, acquire their specific direction through experience and training. This is why a person may in time become a confirmed mountain climber, though not born with a drive to climb mountains.

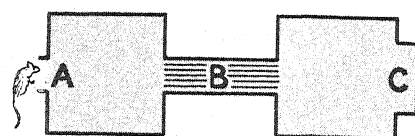
Measuring the Simpler Drives

The measurement of drives in different animals has been carried on in the past mainly with the help of the *activity wheel*, a piece of apparatus which resembles a squirrel cage with an automatic counter added to it. Recently an improved method of studying drives has been introduced. Known as the *obstruction* method, this new way makes it possible not only to measure the strength of each drive but to find how strong different drives are in relation to one another. Precise information has been obtained in this fashion about the drives of the white rat, and this research has opened the way for additional experiments with other animals.

An important aspect of this work is that it supplements materially our information on the simpler human drives, some of which do not differ very much even from those of the rat.



Strength of drives compared in white rat. Each black bar represents one completed run to the goal.



Shown above is the ground plan of an obstruction box. (After C. J. Warden.) The animal is placed in compartment A. The incentive, such as food when hunger is measured, is placed at C. To reach this goal, the animal has to cross passage B, the floor of which is wired, administering an electric shock when any two of its sections are stepped on simultaneously. The animal is thus prevented from venturing repeatedly into the passage except when a drive is present.

Results permitting comparison of different drives—measured when at their maxima—are obtained by returning the animal to A after each run in tests standardized as to the amount of current and the duration of each test.

Shown below is such a comparison, representing the average performance of many animals. In the diagram, each row of black bars pictures the total number of times the rat will run to its goal in 20 min. under pressure of a given drive.

Aesthetic Drives depend on the Brain

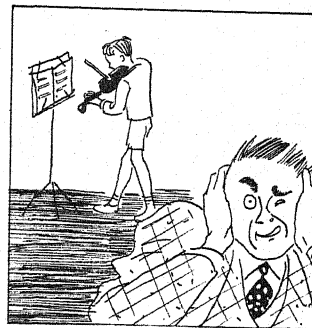
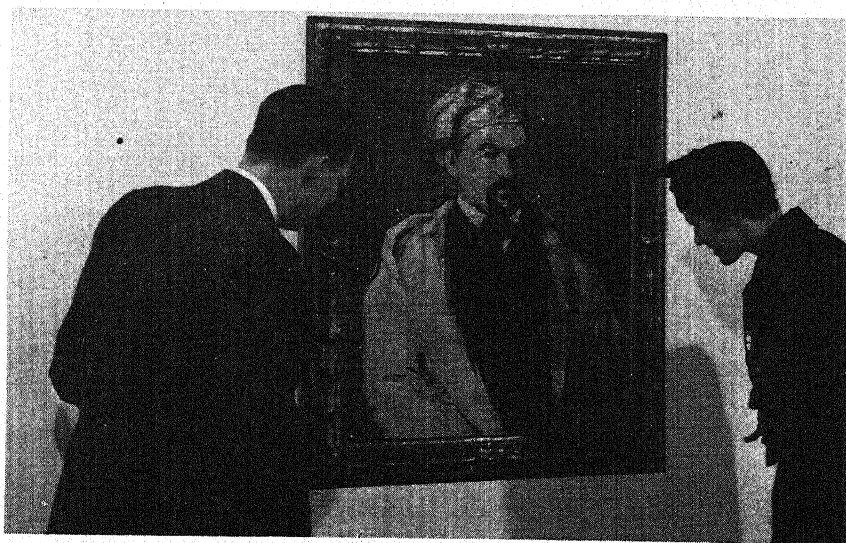
It seems likely that the basis of some of our most profoundly motivated behavior may lie in the brain itself. We are so made that we like some sounds, smells, tastes, and dislike others. The enjoyment of certain colors, such as pure blues or reds, or of certain combinations such as reds and greens together, seems too universal to be acquired. There is also every reason to doubt the ability of the environment to impose on a normal organism a liking for a nauseous odor. (The skunk's defenses depend on this.)

In short, tendencies such as these are trends toward contact with stimuli that afford sensory gratification—and this, exactly, is what is meant by the term “aesthetic.” It is in these simple trends that we find the original impulse of many of our later behavior tendencies—of our interest in flowers; of our fondness of music; our love of the sea; of our craving for balance and, hence, to some degree perhaps even of our sense of justice. Since the organic basis of such drives is as yet uncertain, it is tempting to ascribe them to visceral factors, these being doubtlessly involved. Such an assumption, however, seems untenable, for of one thing we may be certain: we get fun from the use of our body (brain included) from the sheer fact of having one.

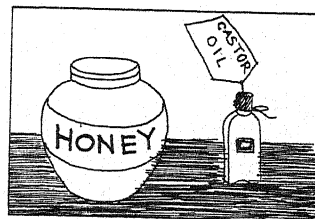
The color, form and tone-seeking activities of museum visitors and concert goers are tendencies kept going by internal bodily conditions. As such, they have every good reason to be considered genuine drives.

Courtesy

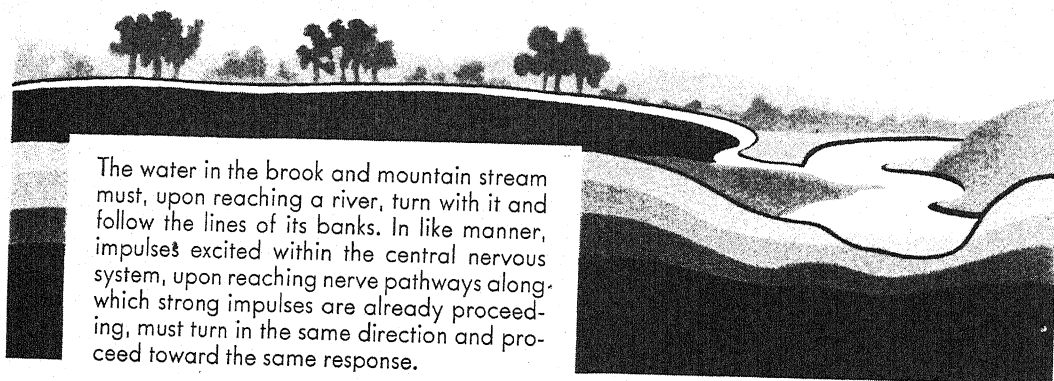
The Museum
of Modern Art



If all he can produce is some scratchy tone, even Bill, your favorite nephew, makes you wish you were a thousand miles away.



There would also seem to exist simple likes and dislikes for certain distinctive kinds of tastes, regardless of hunger.



The water in the brook and mountain stream must, upon reaching a river, turn with it and follow the lines of its banks. In like manner, impulses excited within the central nervous system, upon reaching nerve pathways along which strong impulses are already proceeding, must turn in the same direction and proceed toward the same response.

The Channeling of Drives

At first, an infant's interest is aroused by a wide range of stimuli—colors; sounds; other impressions, including his own activities. As the infant grows, certain stimuli, through sheer intensity and frequency of occurrence, become more dependable than others as means of evoking a response. Specific foods, toys, sounds are marked off from foods, toys, sounds in general. The child grows more discriminating. His drives are undergoing a process of *canalization*—are being channeled in specific directions. In time one wants not merely food or drink but pickles or chocolate sodas; not merely movement or excitement but tennis or gangster movies; not merely tone or rhythm but swing or symphony. Specific needs have been developed; specific tastes acquired.

This fixation on certain familiar types of stimuli is carried over into adult life where it expresses itself in the love of the familiar, in the tendency to adhere to the accepted, and in all fundamental conservatism, whether in politics, science, cooking. This is one important reason why new ideas, especially those that threaten a general reshuffling of existing values meet, when first introduced, with concerted opposition.

For this reason, stimuli that are new or infrequently active, tend to contribute to the response of stronger stimuli and do not produce independent responses. In time, drive behavior thus becomes fixated or "canalized" in a direction characteristic of each person and his culture.

Some familiar manifestations of the drive for power or prestige.

- Striving to make a mark in the world.
- Keeping up with the Joneses.
- Implying familiarity with persons of importance.
- Resenting one's name being misspelt.
- Disliking and avoiding all criticism.
- Making noises like a boss.
- Pretending to know rather than admit ignorance.
- Refusing to admit defeat.
- Boasting or embroidering in the telling of a personal experience.
- Proffering unsolicited advice.
- Trying to create an impression.
- Trotting out Junior and making Pluto do tricks.
- Inviting the "right" people for dinner.

The person who escapes this in one field, such as politics, may more than make up for it in other fields. He may be ultra-conservative in the kinds of food he eats or the kinds of clothes he wears. (As for his weakness for new and better gadgets, this seemingly irresistible craving will, upon investigation, usually be found not to extend beyond trinkets the possession or lack of possession of which is really wholly unimportant.)

The channeling or "canalization" of drives takes still other forms. Traceable to it in part is, for instance, homesickness. So also is "inertia." Rather than attempt anything new, we keep doing the familiar things, thus conforming to an established pattern of behavior.

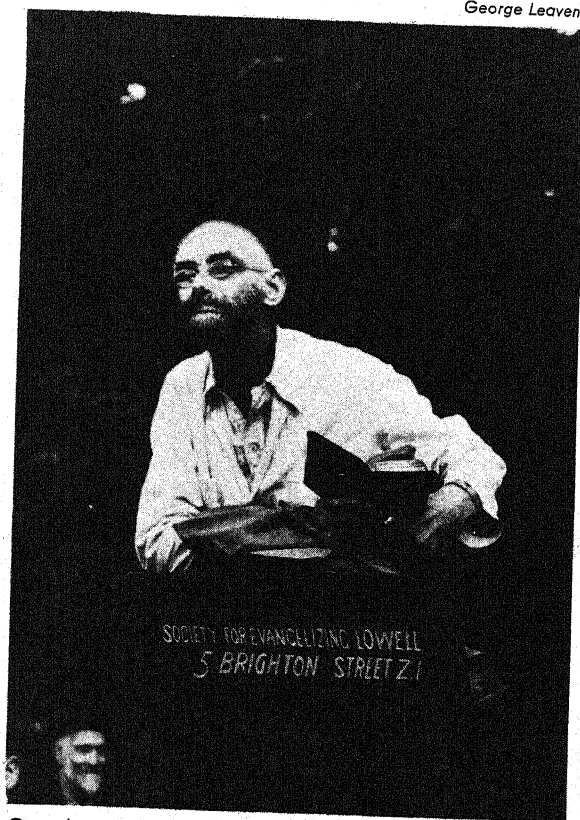
Over and above canalization upon objects, foods, tones, etc., we develop more and more definite canalized attitudes toward our own selves. We build up a picture of ourselves—partly fancy, partly reality—and to this picture we refer for comparison our actions and thoughts and even our appearance. Hence, we come to expect certain things from ourselves, to value ourselves, and to do everything possible to keep this idealized picture of ourselves unspoiled. Or, stated in different terms, we develop a need for respect in our own eyes and in those of others, so important an element in the drive for power or prestige.

As we grow older, the range of stimuli with the power to evoke from us a response gradually narrows down. We get rigid, set in our ways, until finally, in senility, we refuse altogether to respond to the unfamiliar.

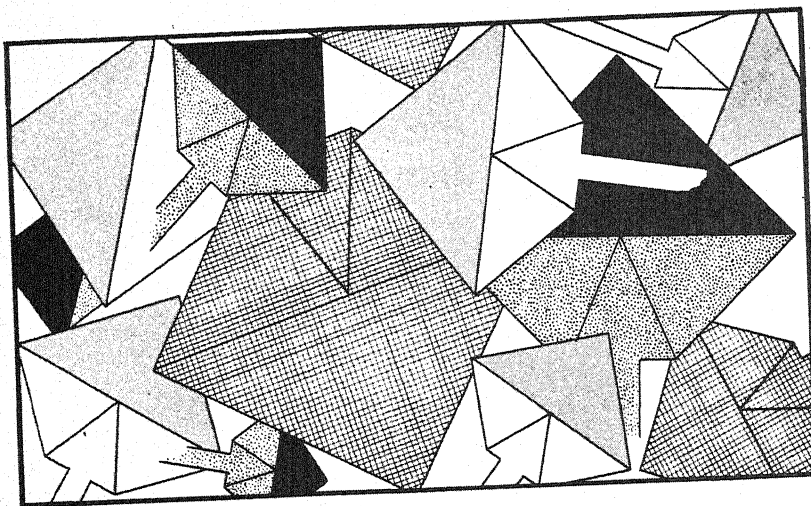
More manifestations of the prestige drive.

- Striving to be one of the gang.
Putting on airs of mystery.
- Turning argumentative when caught in the wrong.
- Tipping the doorman so he'd be there when guests arrive.
- Going around with a chip on one's shoulder.
- Bullying people or ordering them around.
- Speaking with authority on what one knows nothing about.
- Yielding to flattery.

George Leavens



Canalization may gradually focus more and more of one's energies on one specific point until other things become relatively unreal or irrelevant.



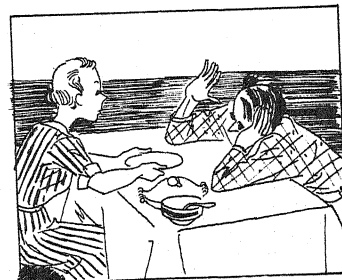
Scores of drives are always present in the organism simultaneously — all flowing into one another; all generating widespread chemical and muscular changes; only some reaching proportions sufficient to give activity a specific character.

Drives don't act singly—they interact

Most human behavior is the result of mixed drives. Of this there can be no doubt. We do not always drink, for instance, purely to quench our thirst. Nor do we usually set off on a vacation merely to obtain rest. Our behavior, often, is the result of several drives pulling in the same direction.

Not all drives reinforce each other, however. Some get in each other's way. For example, we may want to go to the movies, yet we may also want to stay at home with a sick child. Probably, the more complicated our behavior, the more drives there are in the organism, each drive depending partly on the vital organs and partly on the brain. Voting, buying a hat, studying botany, joining a club—these are examples of such broad tendencies, uniting many separate drives that it may be impossible to disentangle each from the whole. A case in point is the maternal feeling. This is what happens:

As a little girl, the future mother is given toys. With these she plays joyously, for most of them are really replicas of familiar objects too heavy or too large to be manipulated in the manner of adults. Her delight is reinforced by many other factors; and in her dolls, in time, she finds new, unsuspected pleasures. They can be dressed or spanked or fed or put to bed. Thus, slowly, there develops a behavior pattern loosely called "maternal." This tendency—directed first at dolls, then at real children—may seem inborn, and it probably is so to a certain extent, as we infer from studies of maternal behavior of young animals. But there can be little doubt that environmental influences are extremely important in this respect in shaping and thereby differentiating the behavior of boys and girls.



"I am so tired that I can't bear the sight of food," says the man whose drives are in opposition to one another.



"I am going out to stretch my limbs and get a bite to eat," says the man whose drives are reinforcing one another.



Both the maternal feeling and the experience called love represent a fusion of many visceral, aesthetic, and activity needs. Neither one is the simple, straightforward tendency portrayed in most popular novels.



In our society competitive behavior is encouraged in home and school. Children learn early that getting

ahead of the other fellow brings parental approval; that work not enjoyed may still win "recognition."

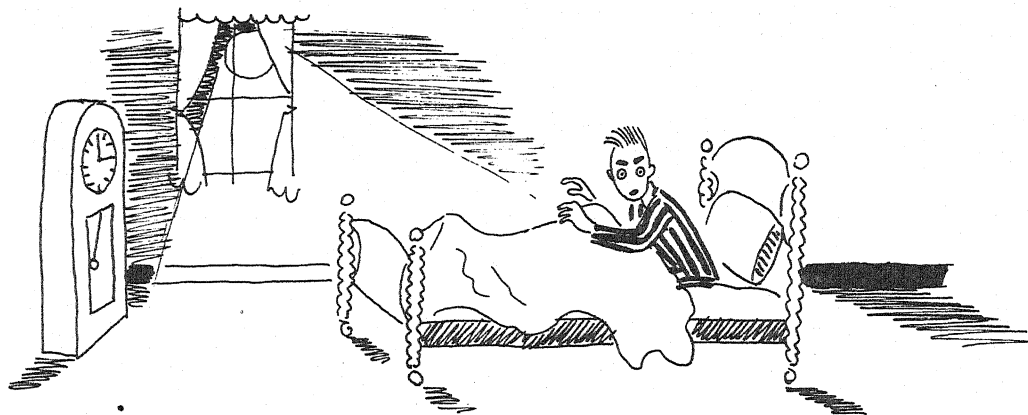
Competitive Behavior

Most research devoted to competition suggests that human beings are not born with a drive to compete. It is mainly through training that they strive to excel in sports and in skill; mainly through necessity that they compete economically, seeking to satisfy their needs by methods which deprive others of similar satisfaction. Thus, it would appear that behavior we call competitive usually fails to occur (1) if there is enough of the commodity sought to go around. (We do not compete for water unless its supply is limited as in a desert); or, (2) if the competing individuals come to know each other as human beings. (We do not readily dispossess a tenant whom we have come to know as a person.)

This does not mean that competitive behavior, as such, could be dispensed with alto-

gether. Indeed, it would be hard to imagine a world where the pursuit of some things by one individual would not interfere with their achievement by another. Some measure of competitiveness may be involved in all human relationships. But, many believe, it is a far cry from this to the exaggerated place it holds in our world today—an emphasis constantly reinforced by the fact that restrictions on property in our society also constitute restrictions on prestige, causing the two things men desire most to be equally scarce.

Other cultures have shown that competitiveness can be kept within bounds through a greater stress on fellow-feeling and cooperative effort—that the struggle for power and possessions does not become really frantic unless people are trained in its way from infancy and stimulated to it throughout life.

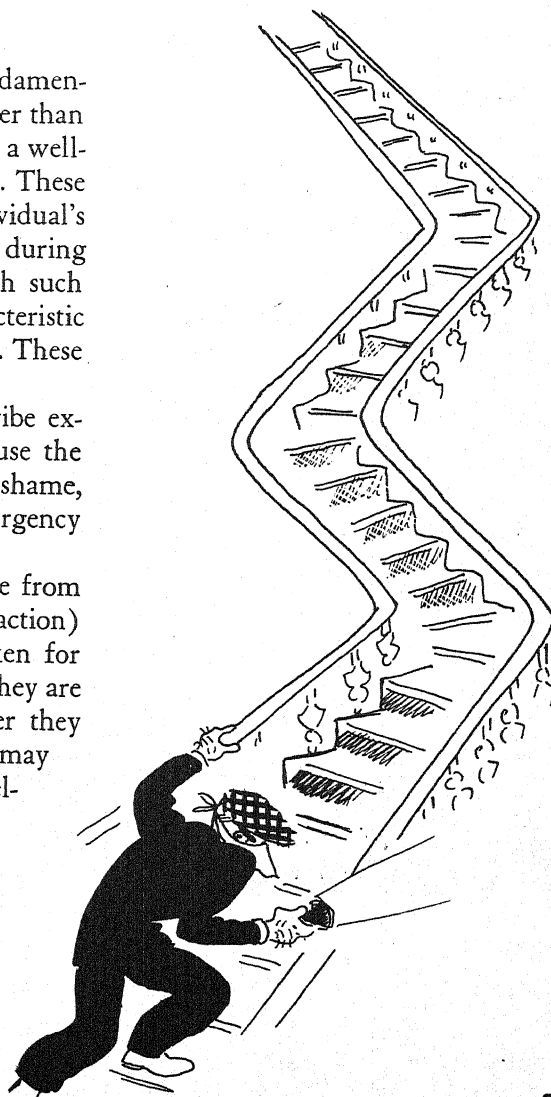


Emotions and Feelings

Drives enable the organism to meet many of its fundamental needs, but not all of them. For there are needs other than those connected with keeping the organism going as a well-fuelled engine—one of the chief objects of the drive. These other needs relate to the maintenance of the individual's safety and well-being in a world never quite the same during any two successive moments of time. To deal with such needs the organism has been equipped with characteristic ways of response, known as *affects* or *affective states*. These include feelings and emotions.

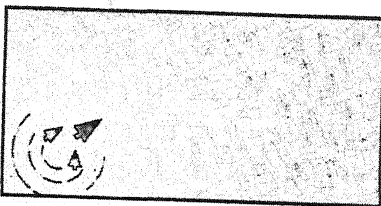
Psychologists reserve the term "feelings" to describe experiences of pleasantness or unpleasantness. They use the term "emotion" when speaking of anger, fear, grief, shame, or other stirred up states involved in meeting emergency situations with emergency responses.

Although emotions are not always distinguishable from drives (since both are motives or forces propelling to action) yet strong emotions, at least, are not to be mistaken for anything else. To the individual experiencing them they are states of intense inner excitement. To the onlooker they appear as muscular and glandular disturbances that may take many forms: tears, laughter, clenched fists, accelerated breathing, scowling, blushing, screaming, trembling, etc., etc. To the psychologist they imply drastic internal readjustments that prepare the organism for swift action based characteristically not on reason but on blind impulse.

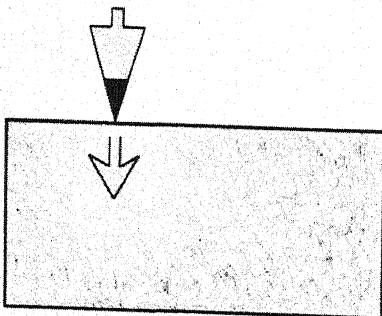


Emotions in the higher animals seem to be very similar to man's, though with this difference. In human beings, an important part in arousing emotion is played by memories and ideas. This element is almost entirely lacking in other organisms, for even in the higher animals emotion is usually aroused only by those stimuli that are immediately apparent to the senses. It is the stranger in

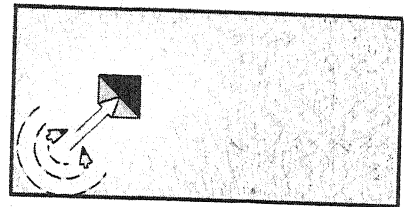
the flesh, not his memory, that makes the dog growl and bare his teeth; an actual stump or shadow, not the thought of lurking enemies, that causes the horse to shy suddenly, throwing its rider, etc., etc.



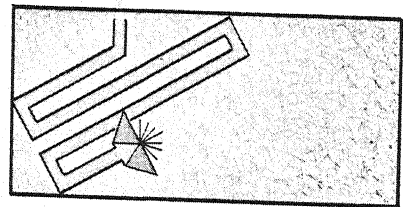
1. A need of the organism generates internal changes, causing stimulation from within.



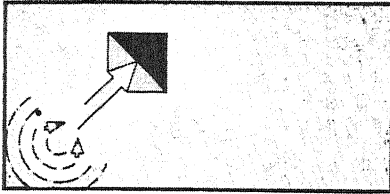
1. Sudden or intense stimulation from without overtakes the organism.



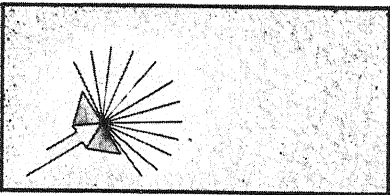
2. This stimulation is localized in a specific part of the body, building up a drive.



2. Widespread internal disturbances follow, blocking all peaceful functions; emotion appears.

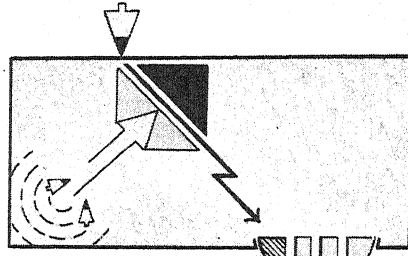


3. The drive grows slowly as the need increases, involving more and more acute stimulation and discomfort.

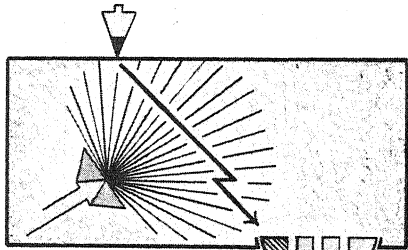


3. Emotion grows rapidly, entailing a mobilization of bodily resources for action and a stirred-up condition, continually spreading.

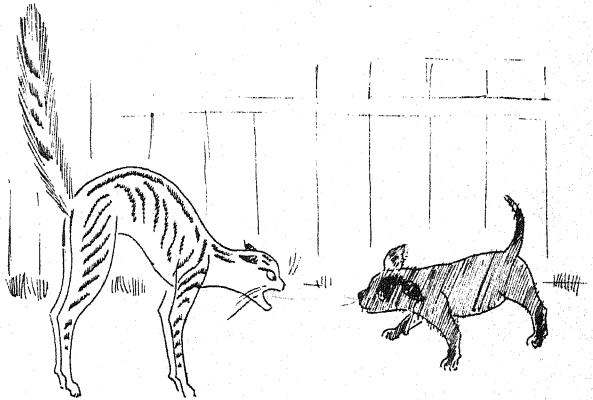
The capacity of ideas to arouse emotion, a factor negligible in organisms below man, is one of the reasons why human emotions are so much more diversified than those of even the higher animals.



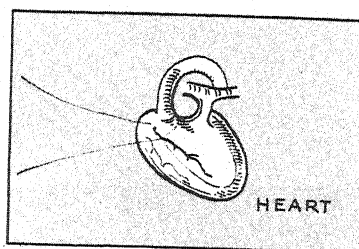
4. It leads the organism to seek out stimuli indicated by experience as bringing relief, and to make responses to them.



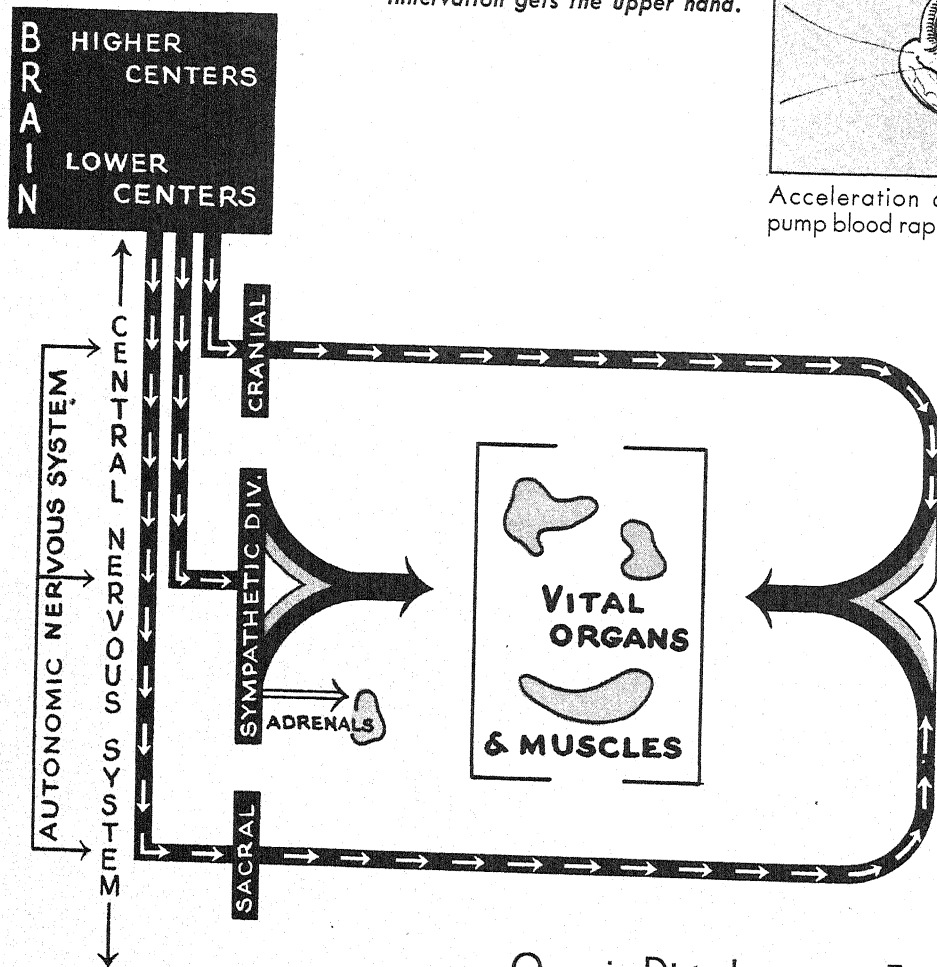
4. It leads the organism to seek any stimuli to which a primitive, explosive response may be made to obtain relief.



Some of the many changes that occur in the body when sympathetic innervation gets the upper hand.



Acceleration of heart beat to pump blood rapidly through body.

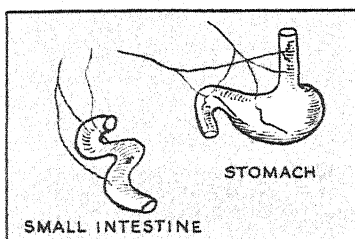


Organic Disturbances in Emotion

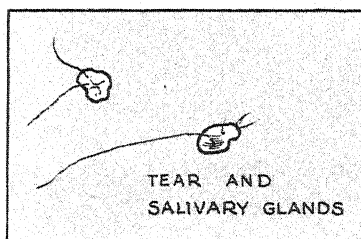
Most vital functions of the body are regulated through nerve impulses of opposite effect.

The organic upheaval that occurs during emotion is related to the requirements of a primitive environment. In such an environment it usually was a matter of life and death for the organism to be able to struggle, fight, or run away with a maximum of effectiveness.

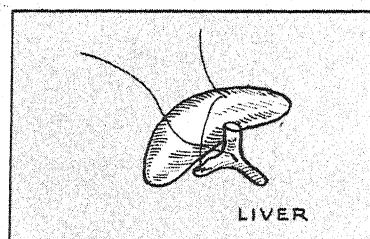
In modern society, struggling, fighting, or running away is often impracticable, but the internal changes generated in emotion and the impulses that accompany these changes are still the same as those originally effective for emergencies in a primitive world. Man in this respect still bears a close



Inhibition of digestion as part of a general freeing of the system of all normal functions that can wait.



Action of tear and salivary glands and changes in muscles not under voluntary control (unstriated).



Release of substances from liver, causing increase of blood sugar available as fuel for the muscles.

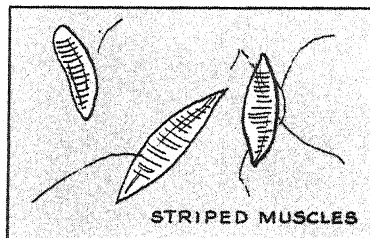
kinship to the rest of the animal world. When under the sway of emotion, each of us is reminded that he is the product of millions of years of evolutionary development.

The mechanism of these internal changes that occur in emotion lies largely in the nervous system.

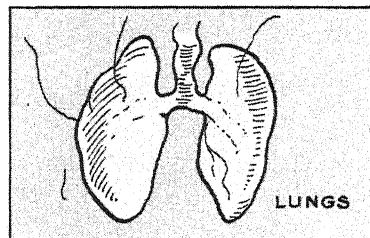
Nerve fibers within the brain and spinal cord, constituting the *central nervous system*, run out to connect with the vital organs, muscles, and glands. Some of these fibers form the *autonomic nervous system* (see diagram). The autonomic system has three divisions. Two of these, the *cranial* and the *sacral*, have fibers running to most vital organs of the body. An entirely different set of fibers from the third, so-called *sympathetic* division, runs out to identically the same organs. This arrangement serves to regulate each organ by two nerve impulses of opposite effect. Just as the cranial division tends to hold down the heartbeat, so the sympathetic tends to push it up. Just as the cranial and sacral divisions together tend to promote digestion, so the sympathetic tends to block it.

Ordinarily a balance is struck between these opposing nerve impulses, causing the organism to function at a routine level. In many cases, however, the sympathetic division gets the upper hand, halting all peaceful processes and mobilizing all available resources for action. This upheaval is reinforced through action of the *adrenal glands*, which form a striking exception to the rule of double control of the vital organs. These glands, regulated exclusively by the sympathetic division, are stimulated in emotion to secrete into the blood large quantities of *adrenin*, the chemical effect of which is to speed up the changes already under way.

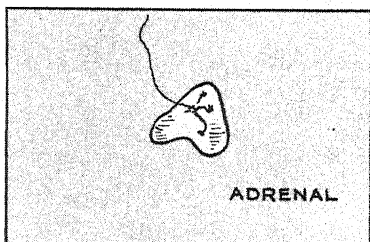
Thus, within a few moments, the organism is made ready for action.



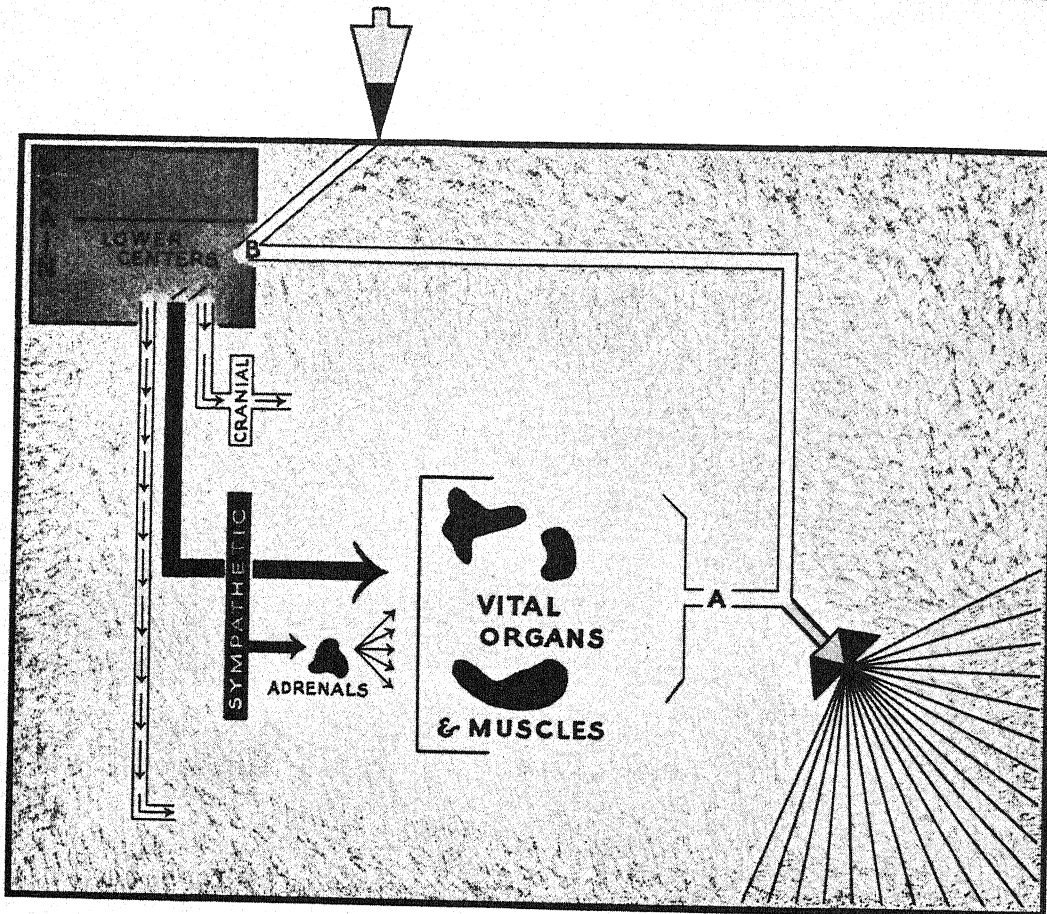
Growing tension of muscles under voluntary control (striped muscles) conducive to greater alertness.



Accelerated action of the muscles which control breathing, forcing greater intake of oxygen through increased speed of respiration.



Release into blood of secretion from adrenal glands, reinforcing all other effects of sympathetic innervation and, in addition, making the blood clot more easily.



Is emotion purely an awareness of different sensations from the body (A) or is it something which owes its characteristic quality to the activity of (B) an emotional center?

What is an emotion? About 1885, a Dane, C. G. Lange, and an American, William James, though working independently, advanced approximately the same theory of the emotions; and ever since, a lively controversy has raged around the subject. According to this theory, known as the *peripheral theory*, the experience which we call emotion is simply our awareness of the organic changes resulting from bodily activity, including strong "sympathetic" action ("A" in the above diagram). Emotion, in other words, is merely the experience of many tremors, chills, muscular tensions, and other sensations coming from the body. Subtract these, and there is no emotion. It is therefore incorrect to say, for example, that we see a bear, are afraid, and run. Since the fear arises not as a result of seeing the bear but because of what we do about it—our bodily

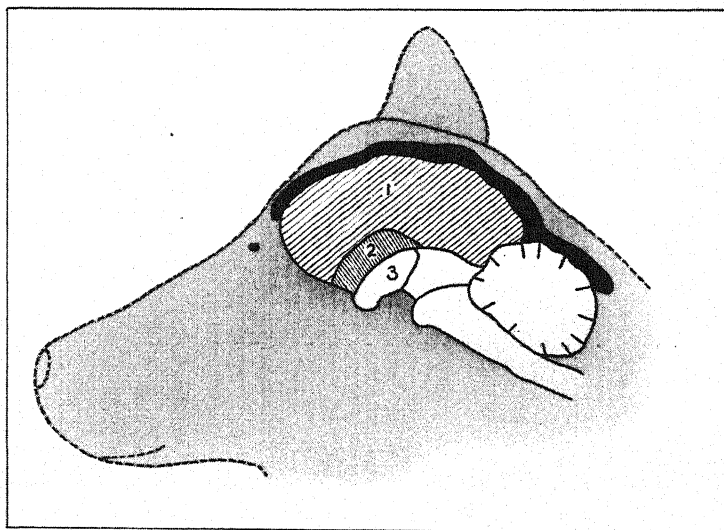
responses to the bear, including flight—James would have us change the sentence around and say: We see the bear, run, and are afraid.

Recent study has tended to question the James-Lange theory, which meanwhile has become almost classic in psychology. The doubt has increased since the American, W. B. Cannon, and his collaborators, advanced the so-called *central theory*, based on experimentation with animals. This theory takes issue with James-Lange. It alleges the existence in the brain stem of an emotional center directly responsible for the experiences we call fear, anger, etc. ("B" in diagram); and it has interesting implications.

Why is emotion so easily aroused? Because, one might answer, this emotional center is situated in a very exposed location, the brain stem being a sort of thoroughfare through which most stimuli-bearing impulses pass on their way to the higher centers (see p. 12). Why are "unreasonable" appeals so potent in arousing emotion? Because, one might say, the brain stem is the seat of many involuntary processes, and can, as such, be excited, in turn arousing "sympathetic" action, without the intermediary of the higher centers. Hence, if located in the brain stem, an emotional center would go into action without involving the reasoning processes.

Plausible as it all sounds, further experimental evidence is required before Cannon's theory can be fully accepted. Many psychologists believe that emotion probably involves both principles: that it is an experience which is dependent on brain-stem action as well as on the vital organs and the muscles. ("A" plus "B" in the diagram.)

A series of operations on a dog's brain deprived the animal of its higher centers (1). When he recovered, the dog showed increased emotion, the operations having seemingly done away with all restraint on its rage in the face of interference. Next, part of the brain stem was removed (2) but no further effect noted. However, when the operation was extended to a region called the thalamus (3), all emotional expression of the dog suddenly ceased, suggesting the existence of an emotional center in that part of the brain.





Courtesy Hudson Motor Car Co.

A child may be reprimanded without anger; a risky journey may be terminated without joy; a taxi may be dodged without fear. Emotion surges when the situation gets beyond the individual's control, representing something for which he is not prepared.



R. Siemianowski — F. P. G.

It is hard to think of anything that can create such a thorough feeling of pleasantness as smooth-running physical activity.

How Feelings and

Emotions are Aroused

Most of life's primitive satisfactions (taking a refreshing bath) and annoyances (chewing a tough steak) seem to be connected with the same center in the brain as the emotions. Feelings such as these, involving pleasantness or unpleasantness, are, however, distinct from emotions. They are not "excited states"—do not seem to involve any uniform organic changes, even when as "moods" they last for considerable periods of time.

Generally speaking, feelings are related to biological advantage. They serve as rough indicators of the favorableness or unfavorableness of the conditions surrounding the organism. As such, they are almost constantly with us, recording even very slight changes in the environment. Thus, a movie may arouse a feeling of pleasantness; cigar smoke from a neighbor may change this to unpleasantness. When the neighbor departs, pleasantness may return, but it may again be turned into unpleasantness if some episode in the plot should remind us of an unsettled family squabble.

If our tempers run short when we're tired or aren't yet in the swing of the day's work, it is because pleasantness, on the whole, is aroused by smooth-running, unchecked activities; unpleasantness by activities that are blocked or fatiguing. Interruptions are especially irritating, and the annoyance is the greater if a skilled act is involved. The beginner, expecting failure at every turn, is better prepared to make readjustments.

These feeling states of pleasantness and unpleasantness, though not emotions and though often present independently of emotions, are closely related to the latter. They are, in fact, easily fanned

Anger (rage) is a state of tense excitement usually accompanied by an impulse to struggle or attack. It is a response to interference and is a survival of the original method of dealing with an intruder or offender. Fear, on the other hand, is usually accompanied by an impulse to escape, for it is a response to danger and is a survival of the original means of dealing with superior enemies.

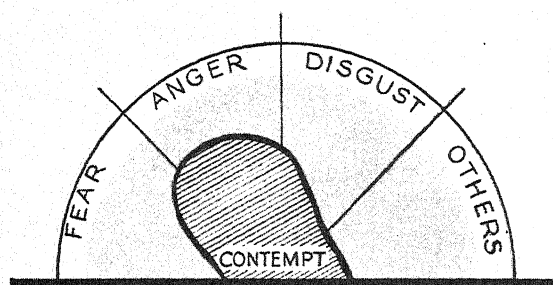


J. W. Jackson

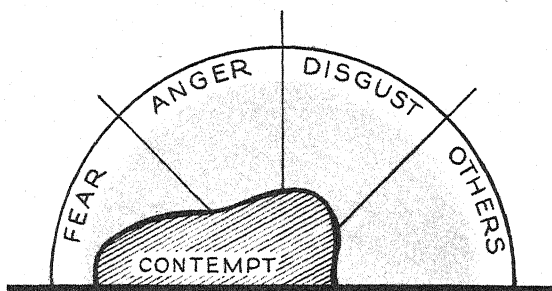
into real emotions. When this happens the organism experiences strong impulses to action. Such impulses are helpful in a primitive environment. But in the civilized world they are often an encumbrance, since society requires that we curb most of them. If emotion is strong, their blocking is one of the most painful of all experiences, fraught with serious internal consequences. Thus, a criminal recently executed with instruments attached to his body, was reported to have registered a pulse of 160, rising to almost 300 at the moment of death (as against a normal 70). As a result of such an upheaval, he would doubtless have developed serious internal trouble,

even had he been reprieved and lived. Likewise, excessive irritations of a business day may result in the complete stoppage of digestion and in a harmful increase in blood pressure, for the organic effects of emotion linger for some hours even after the emotion has passed.

It is for this reason that violent emotion often leaves a person exhausted and sometimes even makes him sick; for this reason, too, that such states should insofar as possible be resisted before they get out of hand. Letting oneself get annoyed or irritated at the slightest provocation is an indulgence which may easily prove very costly in the end.



There may be more anger than disgust in one's contempt for a young nephew who has absconded with



the company's cash; more fear than anger in his "contempt" for the law. (Of course, no emotion is ever as sharply defined as shown.)

Feelings and Emotions Difficult to Classify

In everyday speech, words such as "envy," "contempt," "hope," "remorse" carry a definite meaning. For purposes of scientific classification, however, such labels are valueless. The feeling states these words describe are in every case not clear-cut entities but vaguely defined blends that merge into one another at every point.

"Contempt," for instance, seems to stand for something very definite. And so it does—as a concept. But should we try to find a definite emotion to correspond to this word, we would be utterly at sea. The fact is, there probably exists, not one kind of contempt, but a great number for which we have no separate names. And what is true of contempt, is true of every other emotion. Even rage, or pain, or fear—words which stand for what we assume to be our primary affective states—may take many forms depending on the ingredients of which these states are composed.

It is at least debatable whether the pain caused by the death of a loved one is the same as the pain that arises from solitary confinement. As for such words as "jealousy," or "gratitude," or "humiliation"—they obviously are mere rough indicators of the feeling states they describe. Indeed, many of them carry slightly different shades of meaning than do their equivalents in other languages.

Considerations such as these have led psychologists to give up trying to classify feelings and emotions in terms of the names used for them in everyday speech. Today they are more interested in finding ways of measuring such states with sufficient accuracy to permit the development of means other than linguistic of referring to them.

Quite a few words which stand for emotional states and are assumed to be equivalents in two languages, differ slightly in the meaning they convey. Many such words have no equivalents in other languages, or only remote equivalents. For instance:

In English the word "compassion" suggests a downward direction—a feeling state extended as toward one weaker or inferior. The word, therefore, is not far in meaning from "pity."

In Russian the word "sostradanye," presumably a direct equivalent of "compassion," suggests a more level direction—a feeling state directed as toward an equal. The word, therefore, is closer in meaning to "sympathy" than to "pity."

In French "esprit de corps" means a feeling of solidarity that sometimes exists in a group of persons working together. There is no equivalent for it in English, just as there would seem to be no direct equivalent in French for the English word "eagerness."

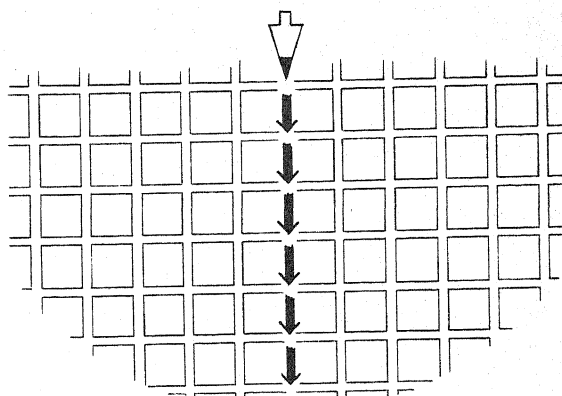
Emotion Measurement

Most of what is known about the nature and intensity of the organic upheaval that appears in emotion has been derived from carefully controlled laboratory experiments with animals and human beings. Such experiments concern themselves with many things. They measure changes of blood pressure during emotion; changes in pulse rate, breathing, skin resistance to electric current, etc., etc.

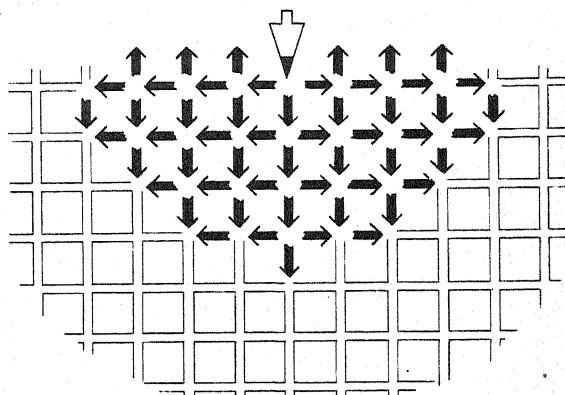
When a person is upset, such changes are usually all present together, their measurements supplementing each other. This is because they arise through activity of the sympathetic system which shows a tendency, once started, to go into action all over the body, more or less in the fashion of the old nerve-net (see diagram; also text on page 12).

An interesting by-product of such laboratory experiments is the *lie-detector*, developed comparatively recently and used especially with criminals. This piece of apparatus does not really "detect" lying directly, as its name suggests. What it detects is the presence of various organic changes in the subject. It is thus based on the assumption that not telling the truth is accompanied by at least some emotion. This is its strength but also its weakness, for the relationship between lying and emotion has not yet been clearly worked out.

Emotion measurement in the laboratory. The subject, exposed to emotion-rousing stimuli, wears opaque goggles to prevent him from seeing what goes on. His fingers are dipped into fluids that conduct electricity. Changes of skin resistance to electric current (called "galvanic skin reflex") show on dials. Breathing and pulse rate are also being measured, Metro-nome closes circuit to make a time tracing on revolving drum.

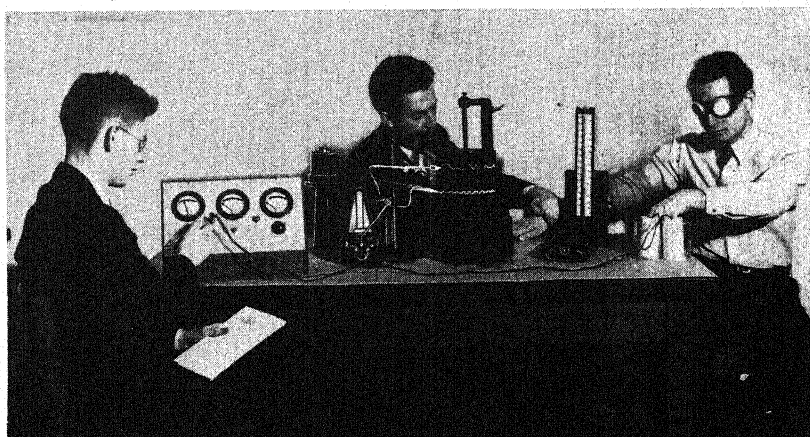


Evolutionary changes in the nervous system led to the development of well-insulated nerve pathways conducting impulses directly from point to point, as shown.



An earlier type of nervous system lacked these direct connections and so conducted impulses slowly and in all directions at once. The sympathetic nervous system is still of this type, a fact which helps to explain the spreading tendency of emotion. (See pages 28-32.)

Lester V. Berqman



How emotions are expressed and

The modern world has been largely made possible through man's ability to communicate ideas through the medium of words, but life as we know it does not rest on words alone. Social give-and-take depends to as great if not to a greater degree on our ability to interpret and to communicate one another's motives through the language of posture and gesture, of intonation and of facial expression.

When a salesman calls at the door we shake our head in negation—as we did in the cradle in rejecting food—and he understands perfectly. When a friend turns on a noisy radio program we pucker our nose in disgust—as we did in response to bad odors—and he turns the volume down. Expressive movements such as these are not greatly altered since the nursery period. But there are few of these. The majority of our emotional patterns reflect the customs and values of the culture in which we function, and, as such, show their acquired character more clearly.

Just how many—if any—distinct emotional patterns we inherit is not known. Some experimenters (and most mothers everywhere) contend that they can distinguish the infant's plaintive cry in fear from his more vigorous protest in anger. Exception is taken to this by some psychologists, but all agree that the infant has only a handful of different ways of showing emotion. Though he is born with many ready-made reflexes, these are not organized into definite groups corresponding to specific affective states. Dif-



from "The
Evil's Party"
—Universal Picture

Actors use the full range of emotional expression. While on the stage they are temporarily free from the ordinary rules of life.



The cartoonist achieves his effect by exaggerating the salient features of each emotion (such as fear, above, or joy on opposite page).



What emotion does this English face express? (See p. 40.)

communicated by human beings

ferentiation sets in later. At first there is emotion in general. Then from this emotion in general specific smiles, scowls and other expressive patterns begin to detach themselves. Whether any of these are inherited in the sense of being late-appearing biological tendencies or whether all are acquired is unknown. It is reasonably certain, though, that the majority are picked up sometime in the early years of life.

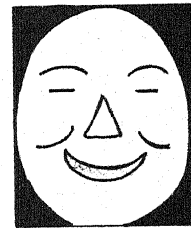
From infancy on the child learns to modify his expression, gestures, intonation, in a manner similar to those around him. First he learns what not to do. He must not wince when hurt; nor snarl and bare his teeth when angry. Then he finds out both when and how to show emotion. He learns that it is inappropriate to show disgust while at the dinner table; that strangers, when they become abusive, are to be allowed much less leeway than relatives or friends before it is appropriate to be angry. He learns to use the social smile, the frigid tones of anger, the sneer, the raised eyebrows that go with disapproval.

While this process is under way, the child also develops the ability to interpret the expressions, gestures, intonations of others—an ability which increases steadily with chronological and mental age. Eventually he becomes quite proficient at gauging other people's feelings from their expressions. The reason that most individuals become fairly adept at this, is that expressive movements within each cultural group tend to be reasonably uniform. Most emotions,



Ewing Galloway

Average adults seek to conceal their real emotion. Social pressure has taught them not to show fear or pride or too much anger.



Experiments suggest that emotion is revealed more directly through the lower half of the face than through the upper half.



*What emotion does this Chinese face express? (See p. 40.)

The photograph at the right is that of a teacher seeking to portray a characteristically Chinese expression of joy (exaltation). In China, social pressure is in some respects more rigid than in America in requiring the suppression of outward signs of emotion. This, together with some difference in musculature around the eyes is what makes the Chinese appear "inscrutable" to most average Americans.



Globe Photo

So far as outward expression is concerned, intense emotion and intense effort amount to the same thing.



Courtesy Otto Klineberg

except in their more subtle shadings, are not too hard to gauge. (Even domesticated animals like the dog or the horse learn to recognize their masters' different moods and are quite sensitive to them.)

To gauge the feelings of a person of a different cultural group, however, is quite a different matter.

Characteristically, very intense and very mild emotions are the most difficult to judge. In intense emotion there is too much "expression;" the different facial and other elements which otherwise enable us to distinguish grief from fear and fear from anger are submerged in a general distortion of features and of voice.

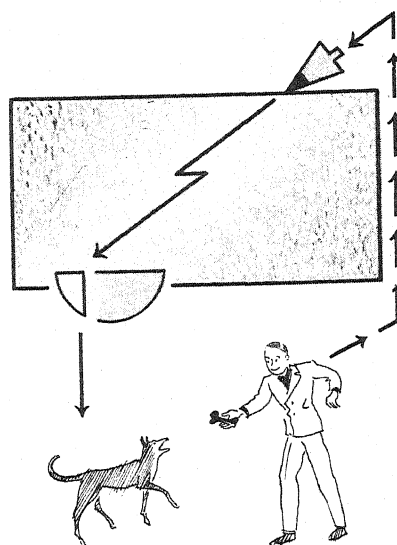
In mild emotion these elements are also hard to see—because, being weak, they don't stand out sharply enough from one another. Only in its middle range is each emotion clearly distinguishable, enabling us to tell it at a glance; and, for that matter, it is only here that it is biologically efficient. As everyone knows, too little emotion produces no action, while too much emotion, because of its widespread internal repercussions, has a paralyzing effect. It makes one impotent for action.

Positive and Negative Responses

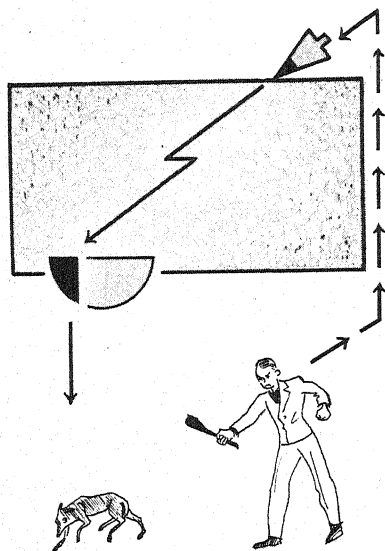
In an experiment, motion pictures of newborn infants were shown to a group of observers. The pictures showed the infants in various situations, and the purpose of the experiment was to find whether an audience could distinguish specific expressive patterns in the behavior of the newborn.

Following the first showing of the pictures, the observers proved substantially correct in their answers. However, when the films were shown to them again—this time in a sequence purposely linking the various responses with the wrong stimuli—the unsuspecting observers gave themselves away. Their answers showed that they had been taking their cue each time not from the specific response, as witnessed on the screen, but from the stimulus preceding the response.

For instance, behavior they had labeled "fear"



A positive response represents an approaching tendency, involving behavior toward the stimulus.



A negative response is an avoiding or withdrawing tendency, involving behavior away from the stimulus.

when seeing it after "dropping" they now found preceded by "pin pricking" and so called it "pain. Errors of this nature appeared in a surprisingly large number of cases.

In view of such results, many authorities believe it is unsafe to assume that we are born with more than two major groups of response tendencies—positive and negative—out of which other, more complex shadings may later develop.

Fear, for instance, though perhaps present as a withdrawing tendency even at birth, is certainly not the fear known to adults. Infants seem to show this type of behavior only in situations for which they have no ready response.

They do not draw back from things, as such—from snakes, thunder, or "ghosts." Fear patterns such as these (as, indeed, most fears) are acquired. They are picked up from adults when the infants are past their first year of life.

Do children experience emotion more profoundly than adults?—women more intensely than men?—one individual more than another? Various experiments have produced tentative answers.

Small children, if anything, experience emotion less profoundly than adults. This is true, however, only in the sense that a child's emotion usually flares up, that it is quickly over, and that it therefore seldom reaches the depth of adult experience. For in children, emotion is to a large extent aroused by stimuli that are right there, in front of them (delight with a gift; anger at having the gift put away) rather than by ideas or situations involving ideas.

As for the difference between men and women, this much may be said as an interesting fact of everyday observation: that social custom encourages women to display certain emotions—fear or grief, for instance. At the same time it restrains men from revealing the same emotions, though it permits them to show joy and, under special provocation, also anger. This may account for the popular impression that women are more emotional than men—a belief, it might be added, for which there exists no scientific proof.

Finally, there is no question but that certain individuals experience emotion more readily than others. Hereditary factors may here come into play. Some individuals may come from more placid stock than others; they may be slower to respond to stimulation and therefore less easily thrown off their balance or excited. This does not mean, however, that people who don't show emotion, don't experience any; for it should be borne in mind that civilized society places great virtue on our ability to inhibit most outward signs of what we feel.

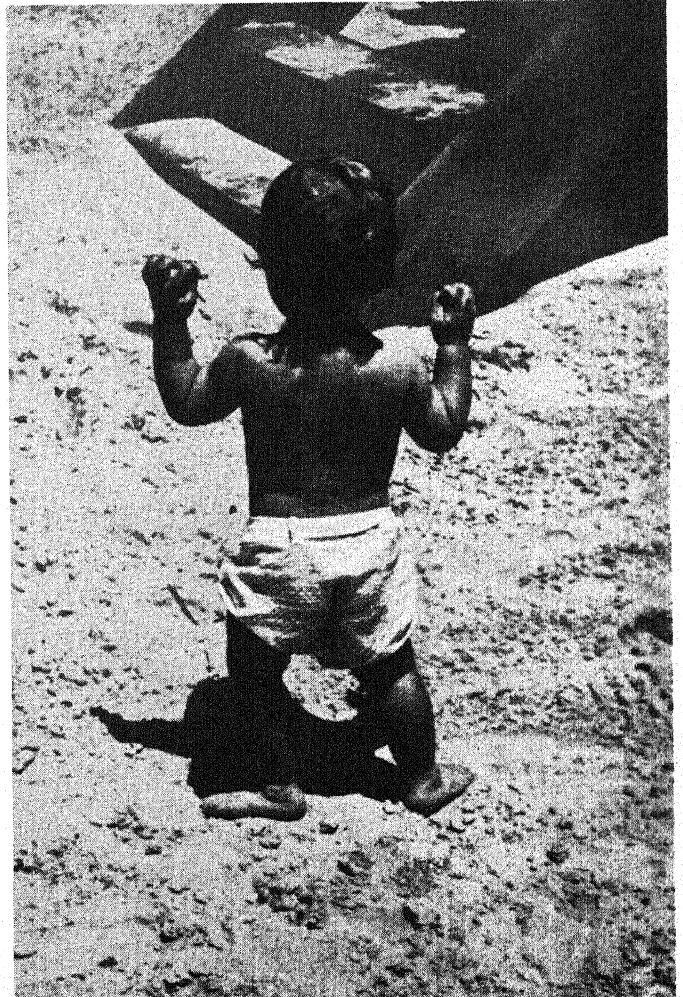
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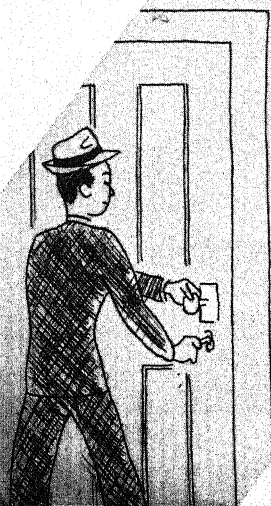
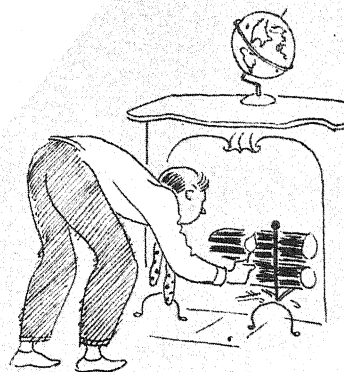
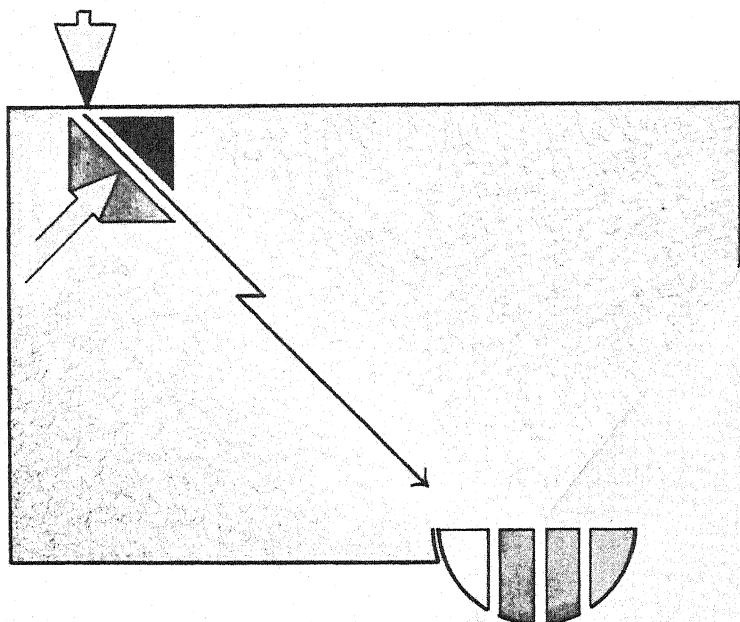
OUR ABILITY TO FIT BEHAVIOR TO CIRCUMSTANCES

Learning
to Walk?

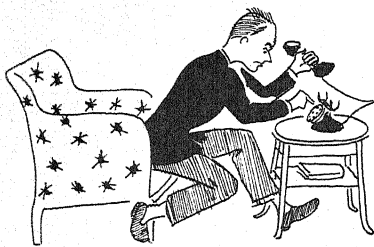
(see page 45)

Max Haas – European





As shown in the diagram, the presence of a need, acting internally as a drive, is what makes the organism respond to a stimulus that would otherwise have no effect. But what makes an organism not only respond, but respond effectively? Unlocking the front door with a key, or turning the faucet, or lighting a fire in the fireplace are not responses that just happen through nature's endowment.

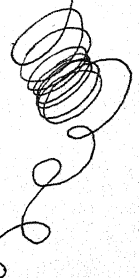
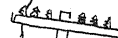
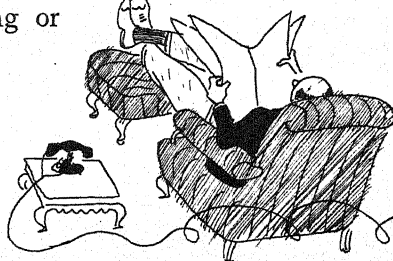


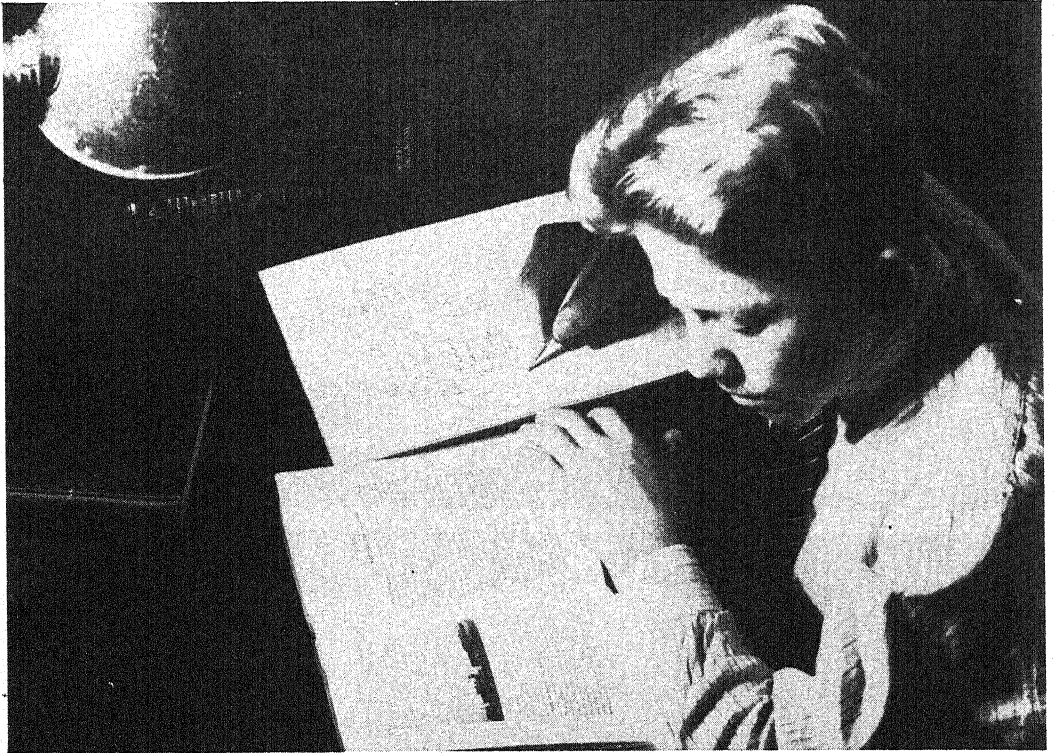
Learning? — or is it Maturation?

As a rule we think of birth as the beginning of life. In reality, when a child is born it is already equipped with a number of reflexes which are ready to function. Each of these reflexes depends for its operation on nerve connections developed before birth. And after birth, just as before birth, this process of growth goes on uninterruptedly. Day by day, month by month, new connections are formed in the nervous system and new functions are therefore able to appear. This appearance of new functions, called *maturation*, accounts for much behavior popularly attributed to learning.

To say of a child who is just beginning to stand up and move around unaided that he is "learning to walk" is therefore probably not strictly accurate, even though it gets our meaning across to others. In the organism's development, the process we call learning and the process of growth we call maturation are so closely intertwined as to be practically inseparable. In many respects the predicament of a child as yet unable to sit up, or stand, or walk, is similar to that of a person who finds himself unable to reach a friend by phone. Failure to put through the call may be caused by the man's inexperience in the handling of the instrument. But it may simply be due to the fact that the number he is trying to reach has not yet been connected. So, too, with the child. Failure to sit up, stand, walk, or handle a spoon in eating may be due as much to a lack of necessary skill and experience (learning) as to the fact that the necessary connections in the nervous system are just barely being formed (maturation).

Just how many of our functions arise through learning, and how many through maturation? This is difficult to answer. In an experiment, tadpoles were anesthetized and kept motionless while growing until the time when they should normally begin to swim. When they were finally released into fresh water, they swam at once with complete ease. This suggests that even complicated movements, as in walking or swimming, may appear spontaneously, seemingly without benefit of learning. At least, learning without growth would be insufficient.





Ewing Galloway

Studying is deliberate application to a new task. But learning is not something we do or do not. It is a process that goes on continuously, embracing all activity that makes later behavior different from what it would otherwise have been.

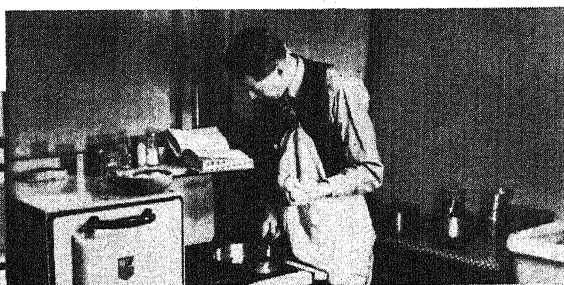
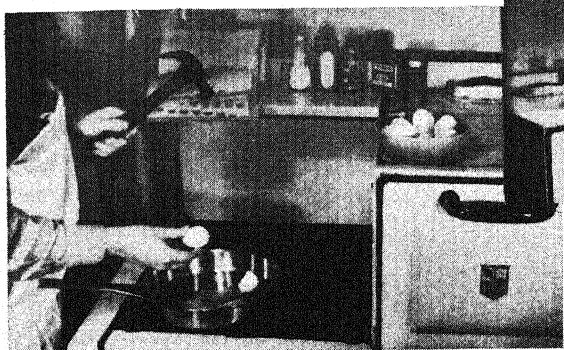
Learning—how it occurs

The ability to modify behavior through experience is a characteristic of all living beings. The sparrow, when reared with canaries, learns to sing like a canary. The rat, when placed in a maze, learns to find its way to the food. Even the lowly earthworm learns which way it must crawl to avoid the sandpaper and electric shock. (page 54.) This capacity to learn is of highest importance to all living beings in that it helps them to adjust to changes threatening their existence. The greater an animal's ability to learn, the greater its chance for survival.

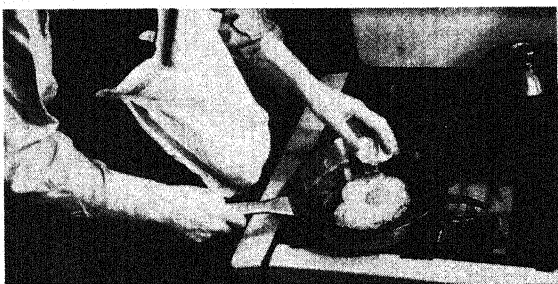
It is by virtue of his complex brain that man surpasses all other animals both in the speed and the range of his learning. It is to this capacity that he owes his dominant position in the world.



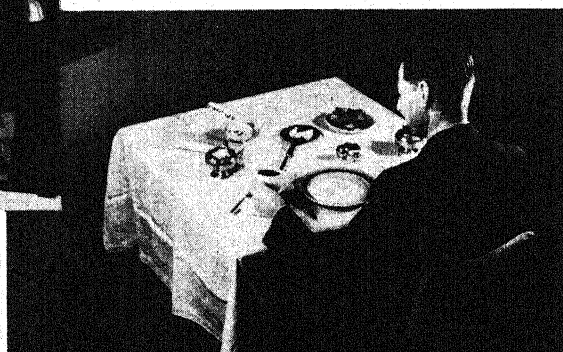
Phase 1. The learning process follows certain definite laws. It involves, first of all, the presence of a learning situation. This arises when a need manifests itself with sufficient strength to force the organism to action.



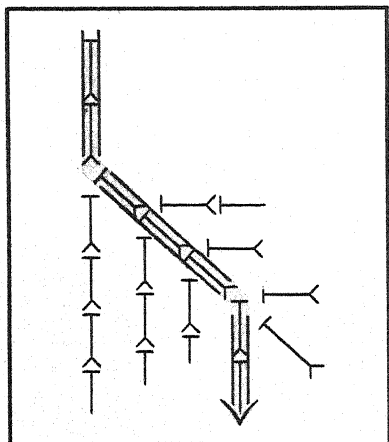
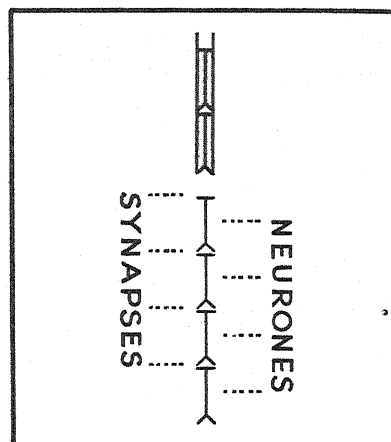
Phase 2. A "trial and error" period usually follows when the organism explores various possibilities, testing different avenues of approach and making many responses inadequate to the successful realization of the goal.



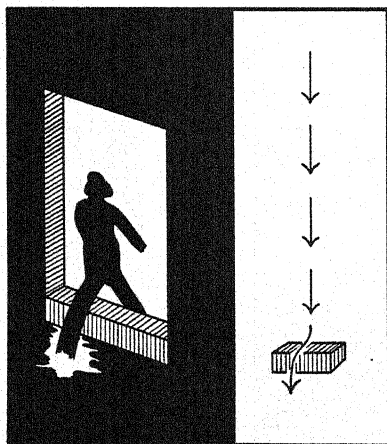
Phase 3. After a sufficient number of trials, the so-called "random" or "faulty" in what the organism does becomes eliminated, and responses are thus narrowed down to those which are most effective in satisfying the goal.



Pathways conducting nerve impulses in the body are not continuous. They consist of many individual nerve cells (neurones) arranged in an interconnecting network. Impulses must pass the junction points (synapses) which separate any two neurones.

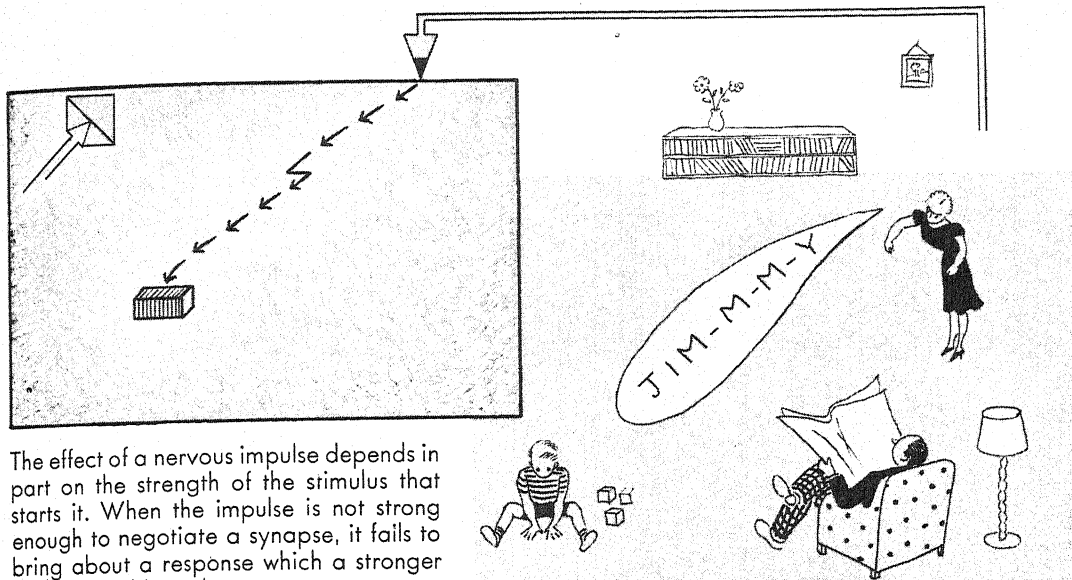


When weak, an impulse may be unable to pass the junction point between two neurones. But while unable to cross in one direction, the impulse may be able to negotiate a synapse separating it from a neurone leading in another direction, as shown.

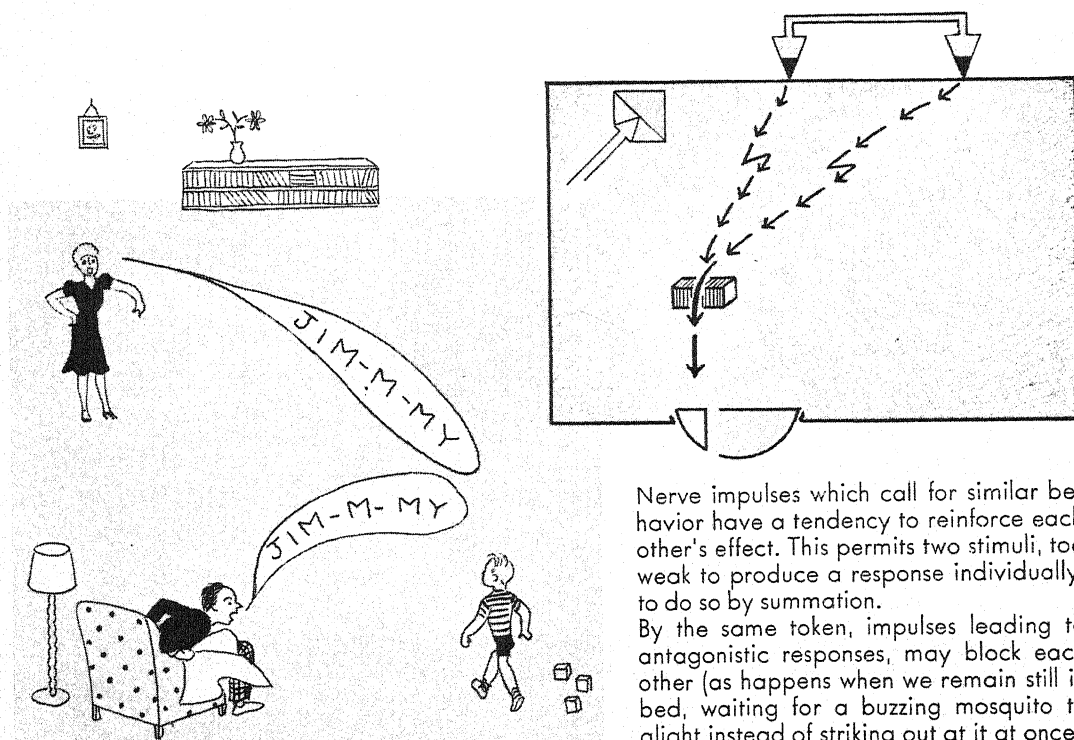


Why Learning Occurs — 1. The Threshold

In traveling through the body, nerve impulses meet with varying difficulty as they cross the different junctures between fibers. This difficulty in getting across synapses is caused by chemical and electrical factors, and it shifts all the time, exercising control over the nervous energy that arises in the body. By this means nerve impulses are routed from neurone to neurone much as trains entering a terminal are routed from track to track. Psychologists therefore think of each response to a situation as having a *threshold*—an analogy they draw from the threshold of a room which, like the junctures between neurones, may be easy or difficult to step across.



The effect of a nervous impulse depends in part on the strength of the stimulus that starts it. When the impulse is not strong enough to negotiate a synapse, it fails to bring about a response which a stronger stimulus could produce.



Nerve impulses which call for similar behavior have a tendency to reinforce each other's effect. This permits two stimuli, too weak to produce a response individually, to do so by summation.

By the same token, impulses leading to antagonistic responses, may block each other (as happens when we remain still in bed, waiting for a buzzing mosquito to alight instead of striking out at it at once).

A messenger is hurrying to deliver a wire. The house where he is to deliver it is a stimulus calling for a positive response—approach. But the vicious-looking dog nearby is a stimulus calling for a negative response—retreat. Which shall it be?

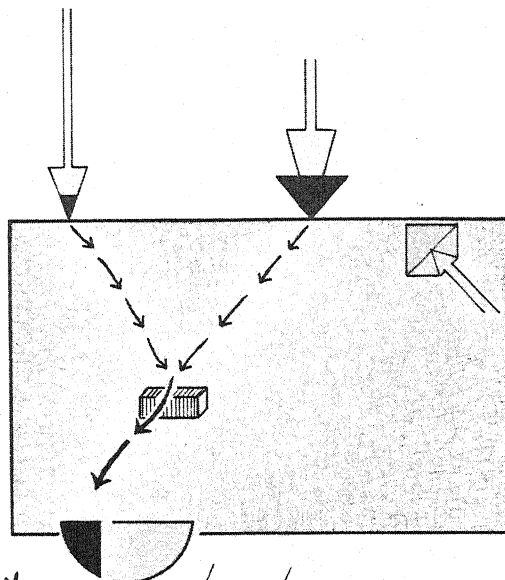


Why Learning Occurs

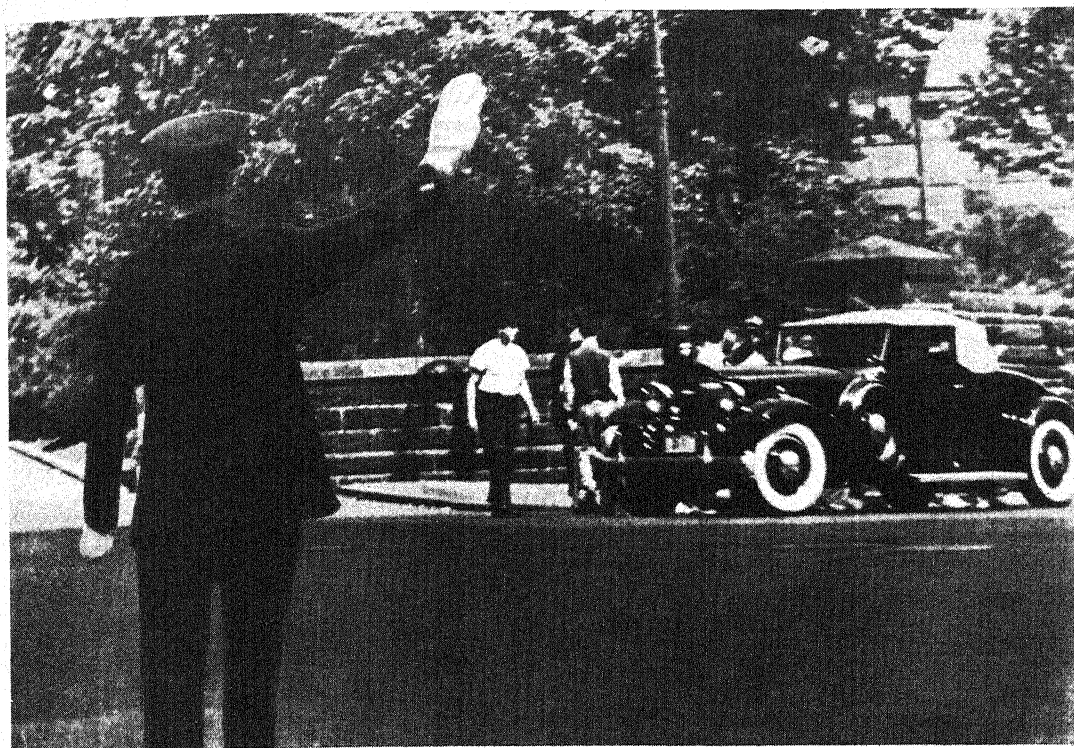
— 2. Dominance

The organism is continuously being stimulated—not by one but by many stimuli acting at once. Some of these stimuli call for mutually exclusive types of behavior. (The buzzing of a mosquito calls for slapping; the thought that the smarter course is to let it perch, calls for waiting.) In this fashion nerve impulses of antagonistic stimuli may inhibit one another. But this does not mean that there is no response. Actually, there is “more” response.

Antagonistic stimuli are seldom evenly matched. Usually one of them generates the stronger impulses. And the nervous system is so organized that the stronger, “dominant” stimulus is able, through its set of impulses, not merely to block the weaker set but to absorb it toward bringing about its own response. Thus, the response “waiting” is actually reinforced by the mosquito’s “buzzing”—provided the buzzing does not shift to a dominant position. That such a shift is not unusual is self-evident. It is seen, for instance, in the case of the man who, though provoked, remains calm until the “last straw” tips the balance, causing the “offending” stimulus to become dominant and so precipitating an angry outburst.



If the dog does no more than glare, the house-stimulus may remain dominant, and the messenger will deliver the wire. If the dog snaps at the messenger, it may gain dominance as a stimulus and bring about a negative response—retreat.

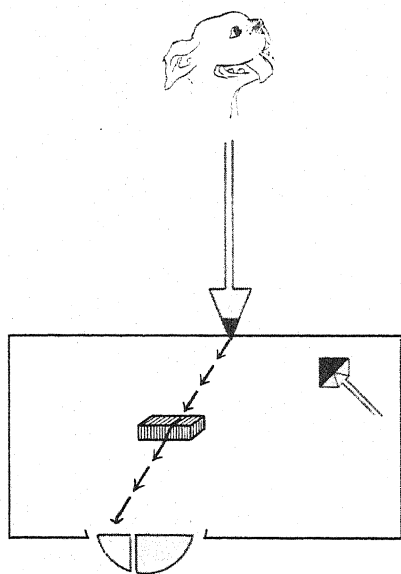


William Nauheim

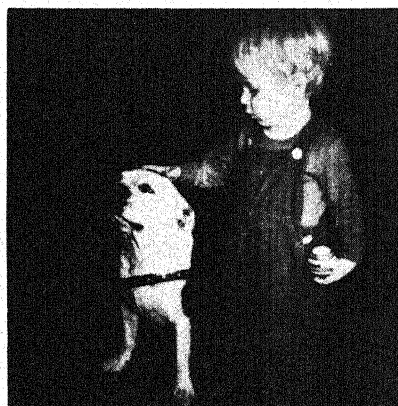
What makes a person step on the brake when a policeman raises his arm?—or reach for his handkerchief when about to sneeze?—or pull out a key when approaching the front door? Is it habit? Colloquially, yes, but the more accurate term for it is "conditioning."

Why Learning Occurs — 3. The Conditioned Response

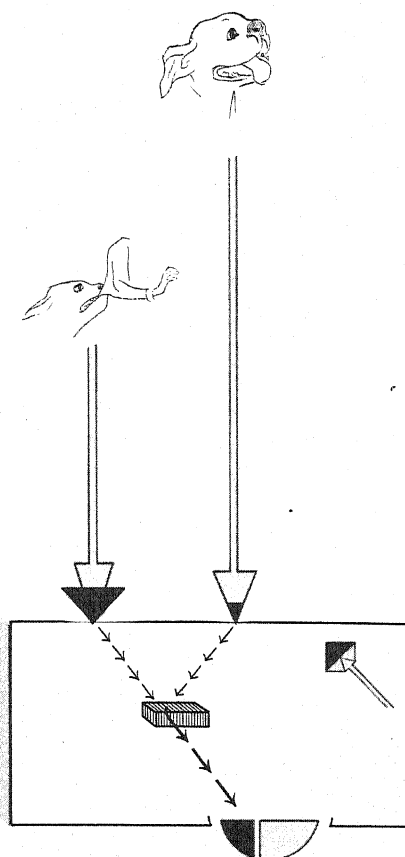
As already stated, the presence of two stimuli calling for contradictory responses means that the stronger of the two tendencies wins, absorbing the weaker tendency in the process. But it means even more. For if the same situation is repeated enough times, the weaker stimulus comes not only to reinforce the stronger stimulus; it acquires the capacity of substituting for it. Thus, if on several occasions a rabbit is shown to a child, and each time the child's pleasure is turned to crying by the sounding of a loud gong, the child will presently start crying at the sight of the rabbit even when no sound is made. "Rabbit" will have become a *conditioned* or substitute stimulus for "sound of gong;" "Crying," as a response not originally connected with that particular stimulus, will have become a *conditioned response*.



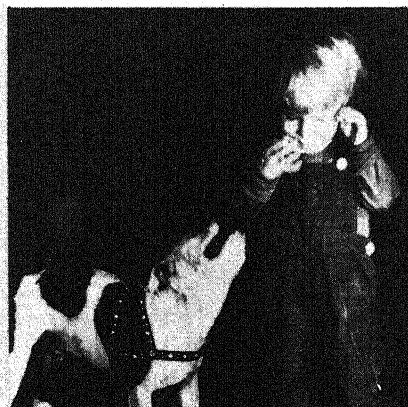
1. In the course of the organism's existence most stimuli able to cause a response are, on first encounter, responded to positively. Thus, it is normal for "sight of friendly dog" to arouse a child's curiosity and, as a stimulus, to bring about the response "petting."

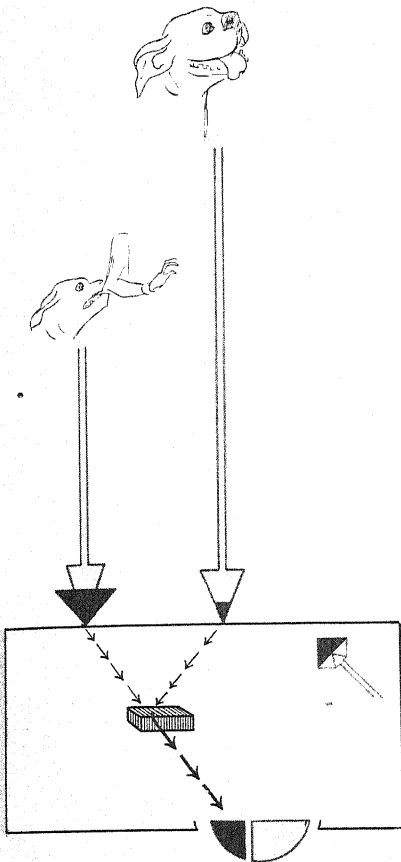


Though we are constantly being conditioned to different things around us, this conditioning must all the time be reinforced if it is to remain active. For example, though every autumn we become negatively conditioned to the radiator, with the advent of summer this negative conditioning

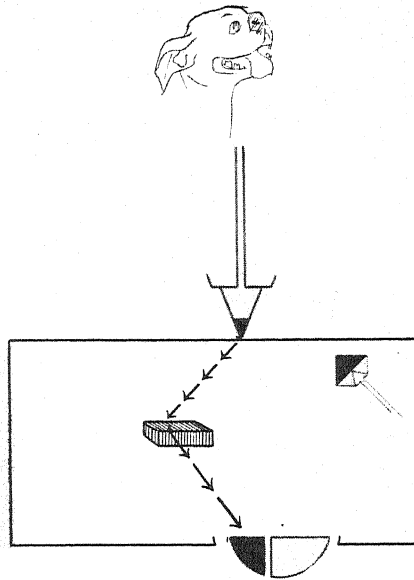


2. However, should the dog suddenly bare its teeth and nip at the child, the situation would be changed. The unfriendliness of the dog—the nipping—would become the dominant stimulus, and a negative response—retreat—would occur in place of "petting."

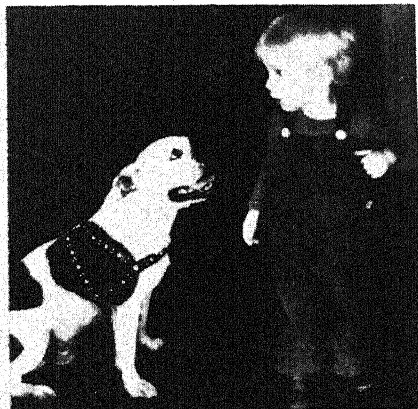




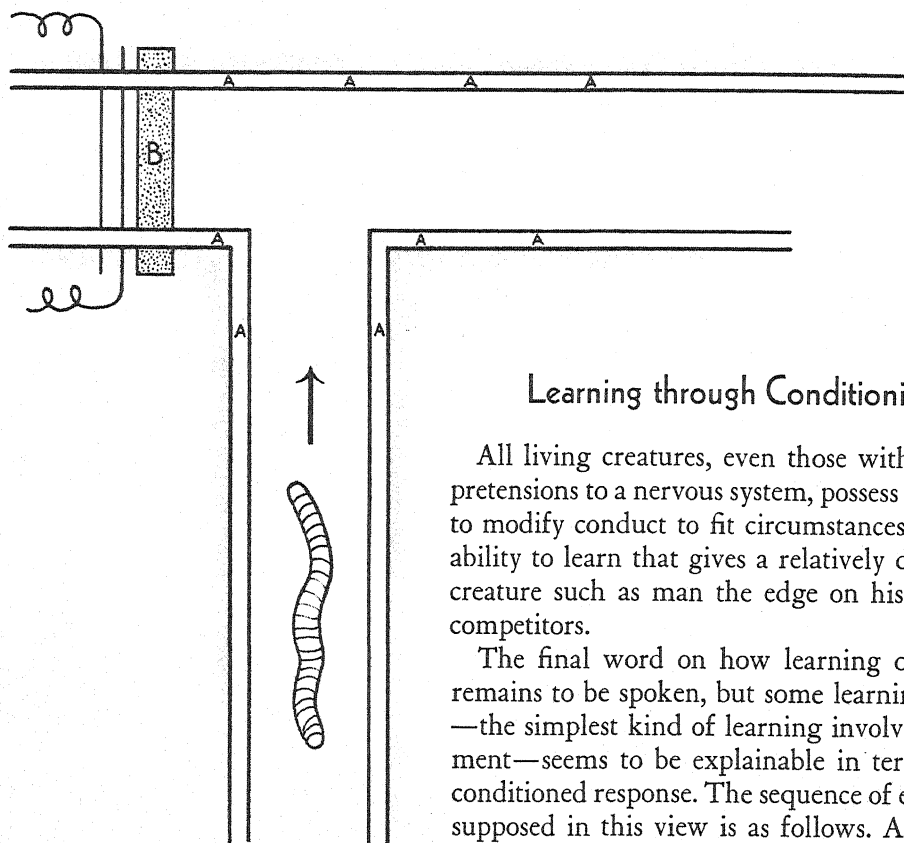
3. Should this situation occur several times in succession—a situation in which the stimulus "nipping," being dominant, would check the positive response "petting" and call forth "retreat" (see page 50)—the child would be well on its way to being conditioned.



4. Thereafter, the mere "sight of dog" would suffice to cause retreat. This would occur because *"sight of dog" would have acquired the power to substitute for the stimulus "nipping," thus always producing "retreat" from the animal—a conditioned response.*



gradually dies out. We sit on the radiator and we touch it freely. Yet, when the steam heat is again turned on in the apartment, we reacquire our former negative conditioning and so refrain from touching the radiator—but we again lose this conditioning during the following summer months.



"T-maze" for use with earthworms. If the worm after reaching the end of the straight path turns to the left, it crawls over sandpaper and receives an electric shock. With repeated practice, involving some 50 trials, the worm learns to turn to the right and escape from the tube. This learning occurs because the worm gradually becomes conditioned negatively both to "unyielding surface" at "A" and to "electric shock" and "scratchy surface" at "B" (Modified from R. M. Yerkes, *J. of Animal Behavior*, '12, vol. 2.)

Learning through Conditioning

All living creatures, even those with the least pretensions to a nervous system, possess the ability to modify conduct to fit circumstances. It is this ability to learn that gives a relatively defenseless creature such as man the edge on his brawnier competitors.

The final word on how learning occurs still remains to be spoken, but some learning at least—the simplest kind of learning involving movement—seems to be explainable in terms of the conditioned response. The sequence of events presupposed in this view is as follows. A drive appears in the organism. It leads to restlessness. This restlessness takes the form of various activities, and of these many are at first inappropriate to the end-result to be achieved. Thus, a boy, in learning to play the piano, hits many a wrong note, just as the worm, in crawling about the maze, proceeds in a crooked line and even in the wrong direction.

Preliminary activities of this nature are said to be of a "trial and error" character. It would be more appropriate to call them "exploratory" since the organism is not necessarily "trying" to do anything but is simply groping and, hence, floundering into the various possibilities presented by the situation. During this process of "examination," a great many separate conditionings are

formed—positive here, negative there. As a result, some activities are dropped, others retained. The latter form a pattern of behavior which unreels itself in the proper sequence. Responsible for this is the fact that each movement provides the necessary internal cues to start the next movement going. So the boy, after enough trials, comes to hit the right notes; the worm, to take the right turn; and we speak of both as having learned—the one to produce a tune, the other to escape from the maze. Conditioning is one of the important ways in which we learn.

Victor de Palma — Black Star



Conditioning is a clue to the mechanism of habits and even skills involving movement. A habit like blowing one's nose, a simple skill like marching, or a more complex skill like knitting involve the muscle sense—the correct sequence of responses being produced because each movement acts as a conditioned stimulus for the movement next in line. (See also text on opposite page.)

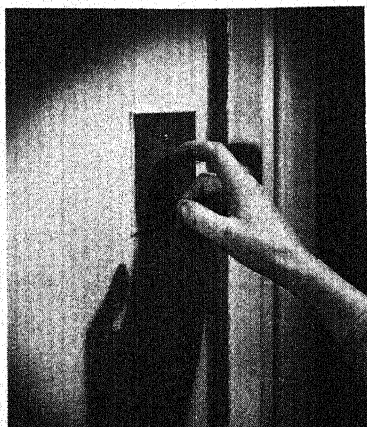


W. A. Van Train





Wild animals not infrequently become positively conditioned to people, approaching them freely, while people sometimes acquire a similar conditioning, even to reptiles. Most children are conditioned positively to clowns, negatively to dentists. We are all conditioned positively to the switch which turns on the electric light in the hall, and continue pressing it, by force of habit, even though we previously observed that the bulb burned out and was not replaced. This we do because conditioning takes time to die out.



Conditioning to Objects, Animals, Persons

Underlying everyday behavior are thousands of separate conditionings, built up in the course of one's existence. Most people are positively conditioned to such familiar objects as tools, keys, utensils, doors, furniture, articles of apparel, etc. They are negatively conditioned to annoying things or things they have been taught to fear, such as exposed electric wires, large and whirling machinery, pompous discourse, the neighbor's alarm clock, etc. It is conditioning, too, that governs our re-

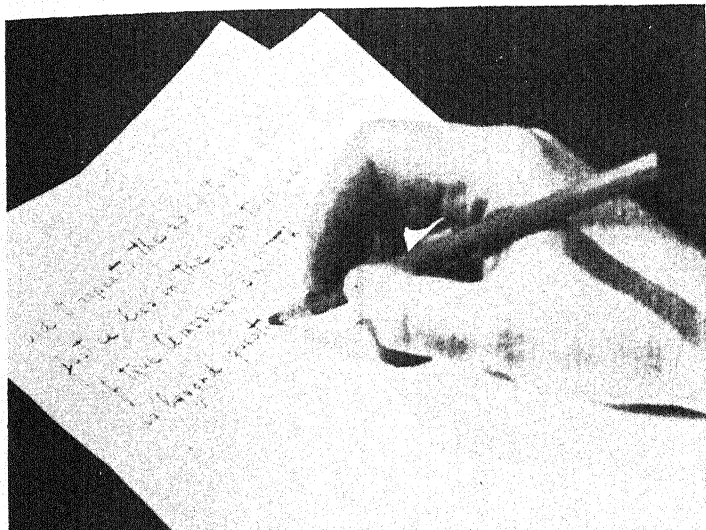


Underwood & Underwood

sponses to certain animals and people; usually positive in the case of household pets, babies, friends; negative in the case of skunks, bullies, successful rivals, or the proverbial mother-in-law. Most of these acquired modes of behavior extend beyond the objects in relation to which the original conditioning was built. This "transferred" conditioning assumes the widest scope, since the original conditioning to a particular object thus comes to govern our responses to all objects that appear similar: all tiny kittens, all fierce looking bulls, all policemen, smiling politicians, long-haired musicians.

Conditioning to Words, Ideas, Situations

Not only objects and persons, but words and ideas give rise to conditioning. In fact, the power of suggestion is simply the power of specific words toward which conditioning has been built, to touch off positive or negative responses (see p. 41.) Auto-suggestion, likewise, is nothing more than the deliberate establishment in oneself of specific conditioned tendencies so as to make desired activities follow "automatically" in certain situations. Most persons carry around with them (without



Robert J. Johnson

realizing it) the mechanism for hundreds of such uncritical responses—a fact fully appreciated and frequently abused by those who deal with people in the mass. As the demagogue well knows, he needs only surround what he wants accepted with such glittering generalities as "human dignity," "national honor," "divine sanction," "real Americanism," etc., etc., and to speak of what he wants rejected as "debasement to the human soul," "radical," "unprogressive," "un-American," to foist on people even those courses of action that run contrary to their own judgment and their own needs.



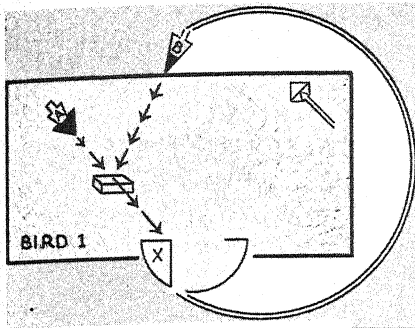
The advertiser who links his message with the smile of a pretty maiden; the propagandist who speaks of "noble purposes" and "blessed rights;" the politician who gets himself photographed with children—they are all trying to capitalize on conditioning which they know exists in the majority of the people comprising their audience. Essentially, they are all trying to make people accept their views, their products, or their programs without first examining into the merits of the case and acting accordingly.

European

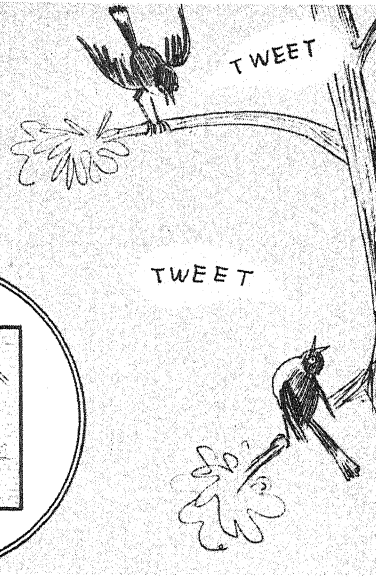
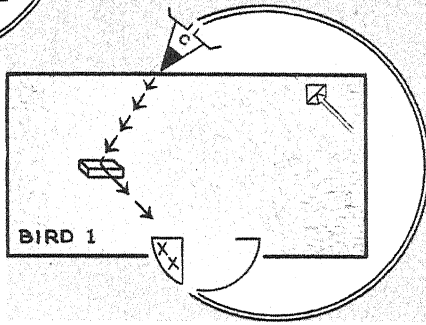




What drowsy person can help imitating this hearty yawn after looking at the picture for a while?



An internal stimulus (a) causes bird 1 to emit a chirp (x). The sound of the chirp acts also as a stimulus (b). Now, since both stimuli, of which the first remains dominant, occur almost simultaneously, the sound (b) in time becomes a conditioned stimulus (c). It is itself able to produce chirping (xx) and does so repeatedly. The stage is now set for imitation. When bird 2 emits a similar chirp, the sound acts

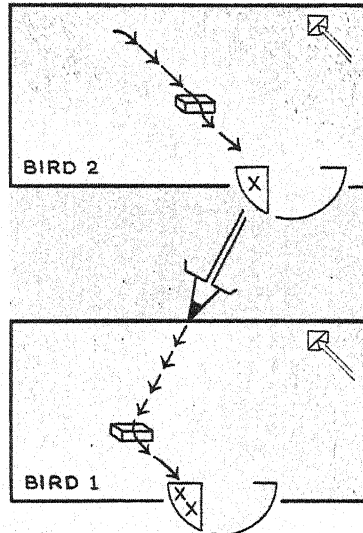


on bird 1 as a conditioned stimulus (c) bringing about the condi-

Imitation of the Conditioned Response Type

Usually when we whisper back to a friend in the theater we are imitating deliberately. But when we clear our throat after he has cleared his, we probably are imitating without realizing that we are doing so. As shown above, this second kind of imitation involves the so-called "circular reflex"—a type of behavior in which each response acts as a conditioned stimulus for the next response. Hence, this kind of imitation can occur only when the individual has already produced all of the component parts of the action he is imitating.

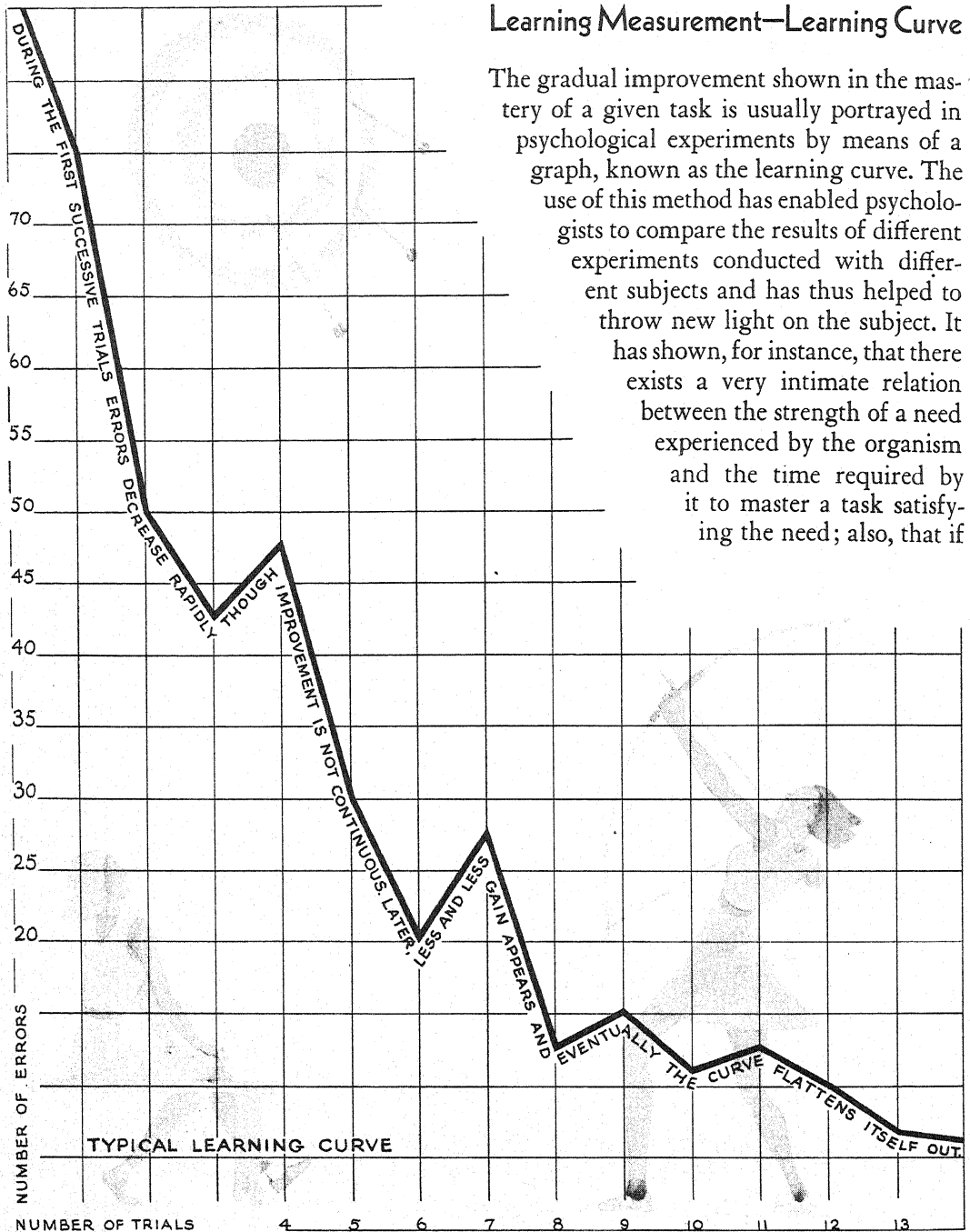
This is why we find that though children delight in using long words spoken by adults, they can repeat only those words which consist of sounds already uttered in their own babbling. Why the sparrow will imitate the canary's song (if raised with canaries) but will only chirp if raised with sparrows. Why Lucy, the neighbor's wife, though able to play the piano, will hardly imitate Paderewski unless she happens to be a ranking player herself.



tioned response "answering chirp" (xx). Hence, we usually speak of bird 1 as having imitated bird 2.

Learning Measurement—Learning Curve

The gradual improvement shown in the mastery of a given task is usually portrayed in psychological experiments by means of a graph, known as the learning curve. The use of this method has enabled psychologists to compare the results of different experiments conducted with different subjects and has thus helped to throw new light on the subject. It has shown, for instance, that there exists a very intimate relation between the strength of a need experienced by the organism and the time required by it to master a task satisfying the need; also, that if

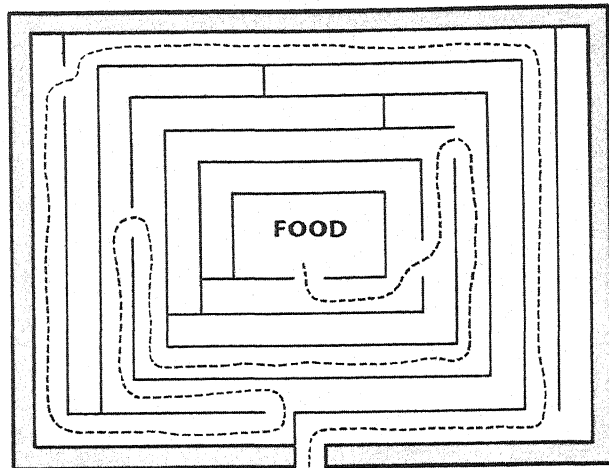


a large enough number of subjects is taken, their composite curve showing successive measurements will have the same general contour in the mastery of easy as well as difficult tasks. The reason for this is that in any learning situation, errors are eliminated quickly at first, then more and more slowly.

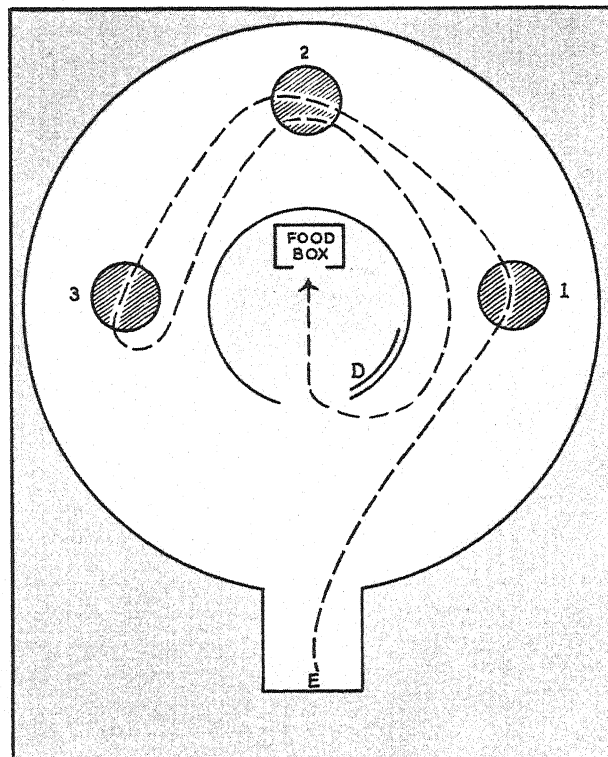
Since the process of learning in adult human beings is extremely complex, workers in the field have devoted their efforts chiefly to the study of children and animals, using equipment like the maze and problem box literally in thousands of different experiments. Such studies have established that though the organism learns with the help of all of its senses, the functioning of even one of these alone will provide sufficient internal cues to enable the animal to retain the "feel" of the successive acts it must perform. Once the maze is learned, even an animal deprived of sight and hearing will run it without an error.

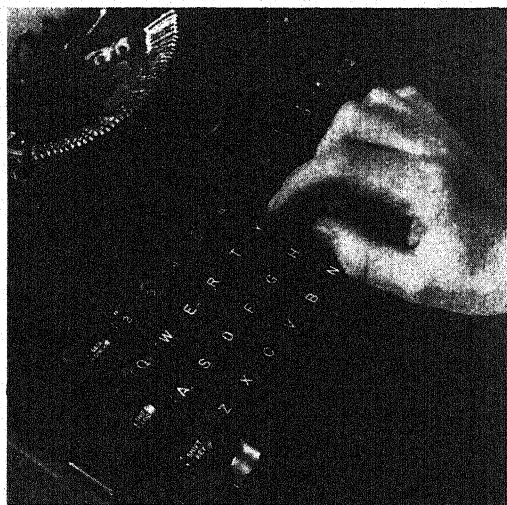


The Jenkins problem box, the ground plan of which is shown at the right, is made of proportions to accommodate different kinds of animals. Starting at "E," the animal must learn to step on the floor plates 1, 2 and 3 in a certain sequence to release door "D" and be admitted to the food box. The sequence used is varied for different animals. It is made more complicated for cats than it is for rats; still more complicated for monkeys which have been known to learn as many as twenty-two moves in the right order to earn their reward, a piece of apple. (By courtesy of C. J. Warden.)



In maze experiments, conducted chiefly with white rats, the animal is required to learn the most direct path from the entrance to the food, avoiding all blind alleys.





In such skills as typewriting, telegraphy, or shorthand, speed is essential, and to acquire it a person must pass through several stages of learning.

Practice makes perfect if

Progress in learning is subject to interruptions during which even redoubled effort may yield no further gain. Such an apparent lack of progress—called a *plateau* because it shows up as a temporary “leveling off” in the learning curve—may have several causes. Of these, one is characteristic of all learning involving movement. It consists of the fact that the individual may have carried his way of approach as far as it will take him. To go beyond, he must attack his work in a new way, learning to combine the elements comprising his task into larger wholes, and to handle them as such. If he can do this—but only then—will he recommence gaining.

N O W I S T H E T I M E

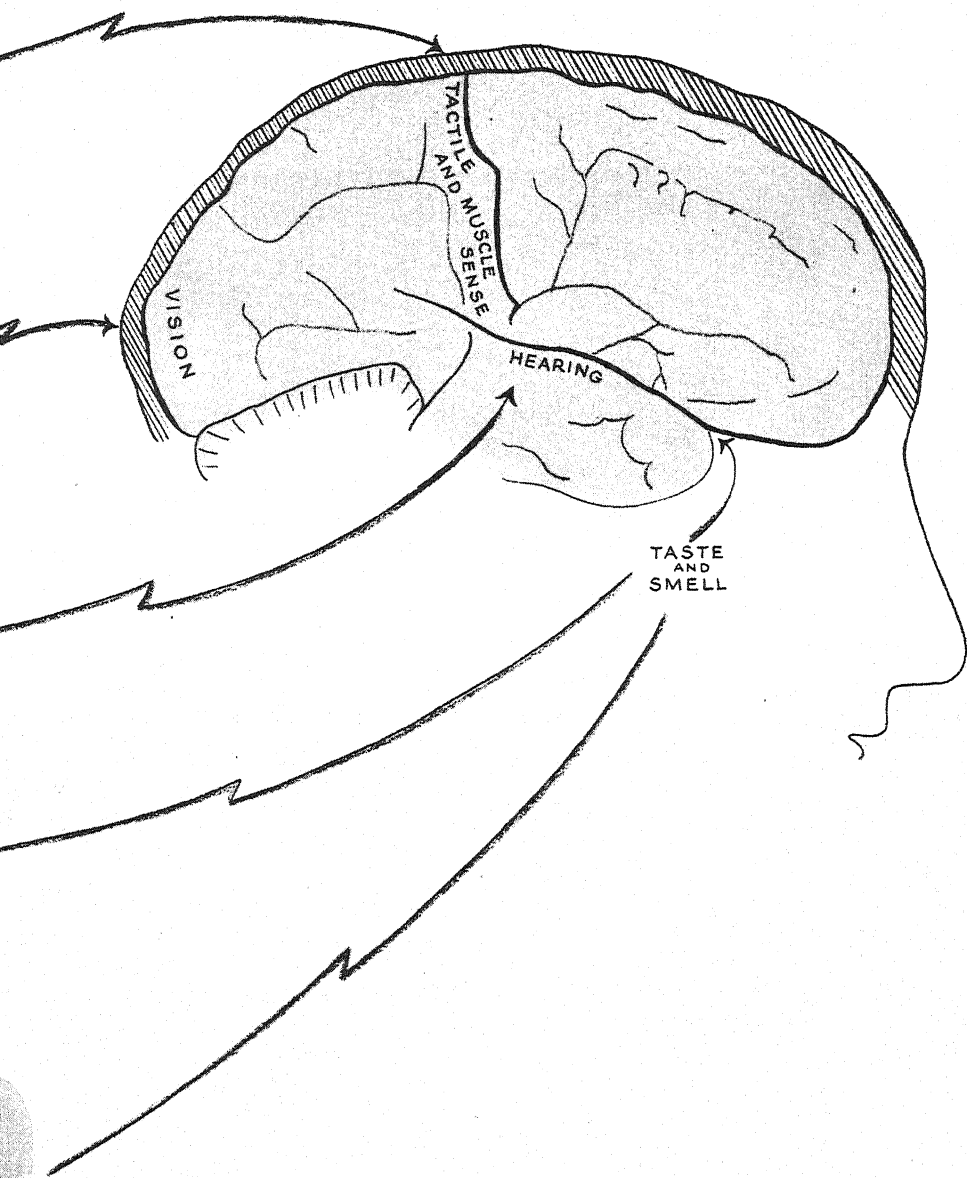
The first stage is the “letter stage” in which a person acquires ease in the handling of each individual letter. Soon he reaches his best speed and must pass to the second stage to show further gain.

N O W I S T H E T I M E

The second stage is the “word stage.” Here he must organize his habits of response so that he may deal with larger units—syllables and very short words. Again, practice soon ceases to produce gain.

N O W I S T H E T I M E

Further to increase his speed, he must learn to work in terms of bigger wholes—to respond to phrases, clauses, sentences, and even to still larger speech units as he once did to individual letters.



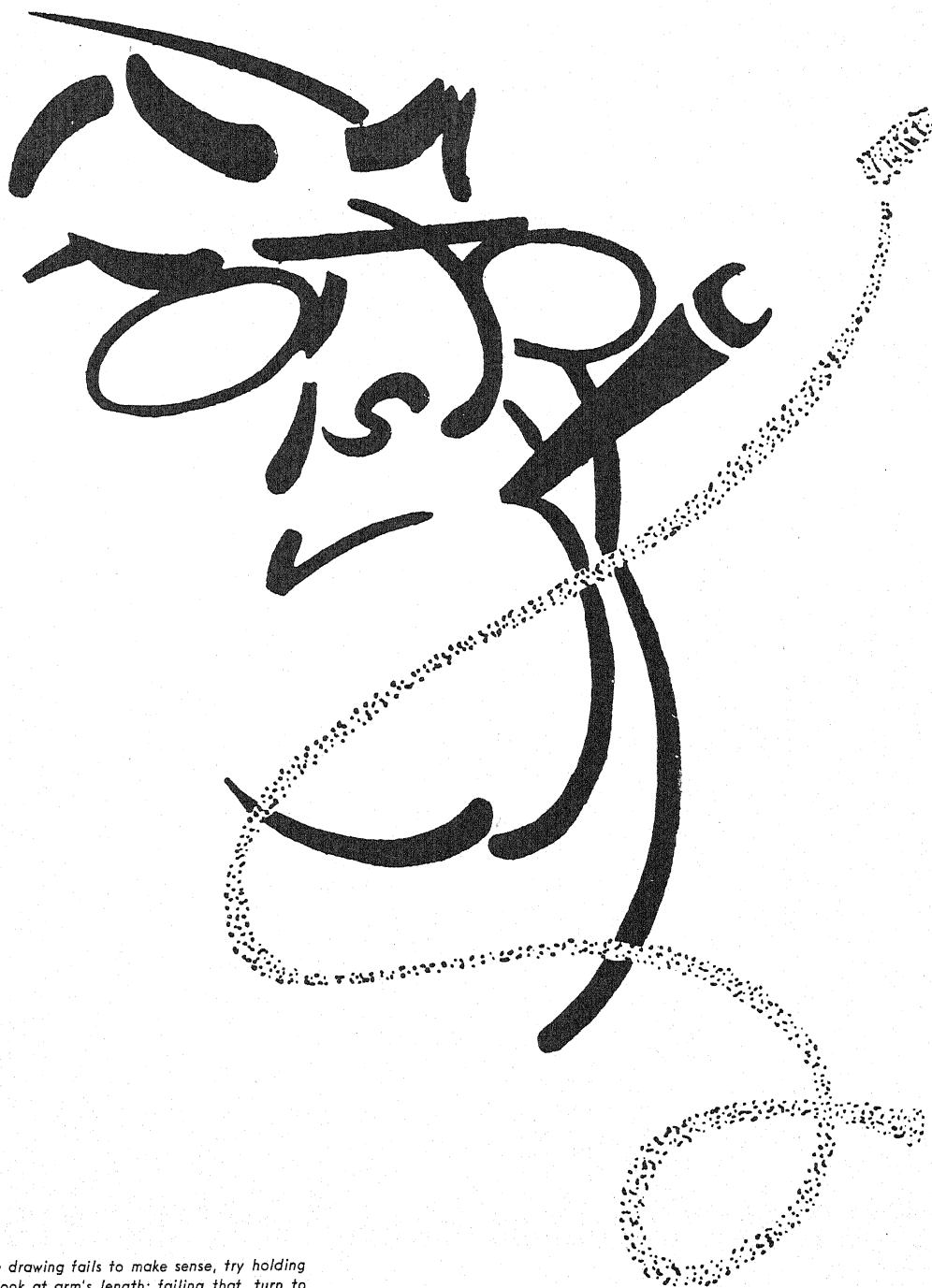
Our eyes, strictly speaking, do not "see;" nor is it our ears that "hear." These and other sense organs merely register specific stimuli — of light, sound, etc.—relaying these in the form of nerve impulses whose impact on the brain is what causes us to see, hear, smell, taste, etc.



Sensation and Perception

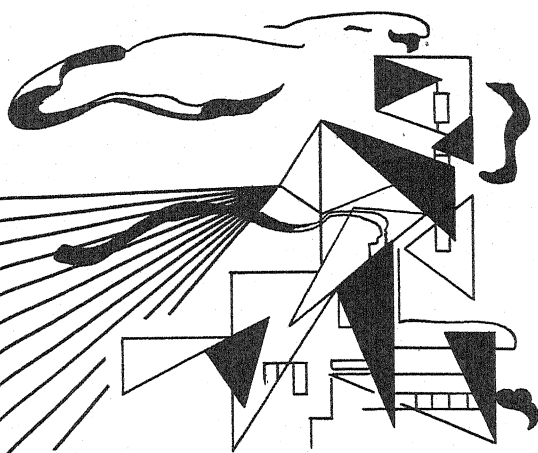
Since the organism lives in its world as an active participant, it is of the utmost advantage for it to be able to interpret correctly what is happening around it. With this function the organism's chief coordinating center is charged. The brain not only receives from the sense organs all impulses bearing sense impressions; it also interprets these in the light of past experience. Although in practice these two processes merge, they are given different names. The first is called *sensation*; the second, *perception*.

The brain's capacity to perceive implies organizing all sense impressions so they can be assimilated. This involves finding their *meaning* — by linking them with something known. Indeed, we find that just such an effort is constantly being made by the organism, for that which has no meaning — that which fails to connect itself in other parts of the brain with something already known — is disturbing and cannot long be countenanced. Yet, it takes effort to make sense out of anything new, for we are not born perceiving but come by each new "percept" through learning. This is why a foreign tongue may seem to the traveler as but a mass of jumbled sound, and two newborn appear indistinguishable even to the proud parents. This, also, is the reason why a person who has not listened much to "modern" music is apt to think that it all sounds alike and sometimes even find its playing almost unendurable.

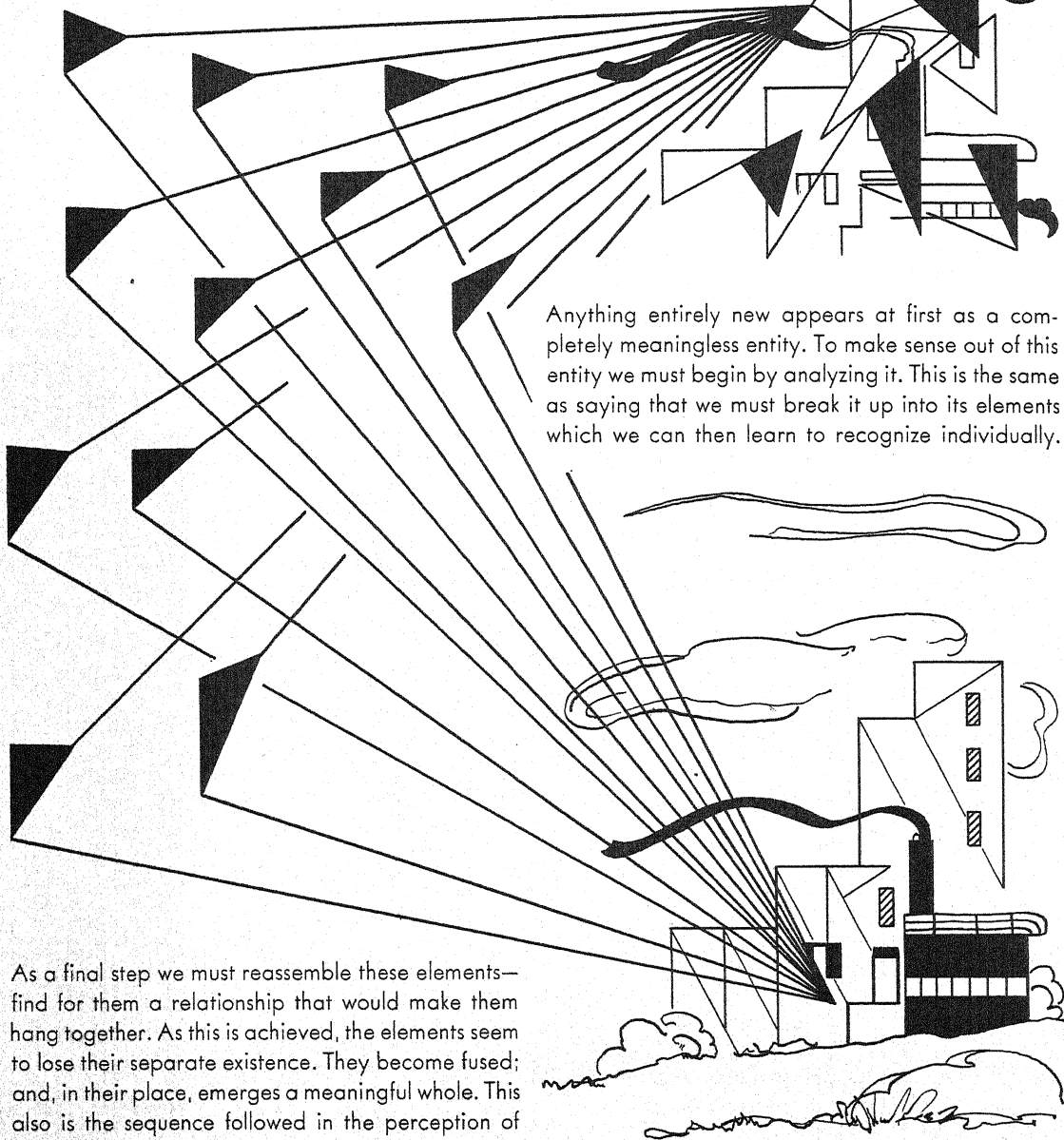


If the drawing fails to make sense, try holding the book at arm's length; failing that, turn to the next page.—Courtesy The Winter Thomas Company, Ltd., London.

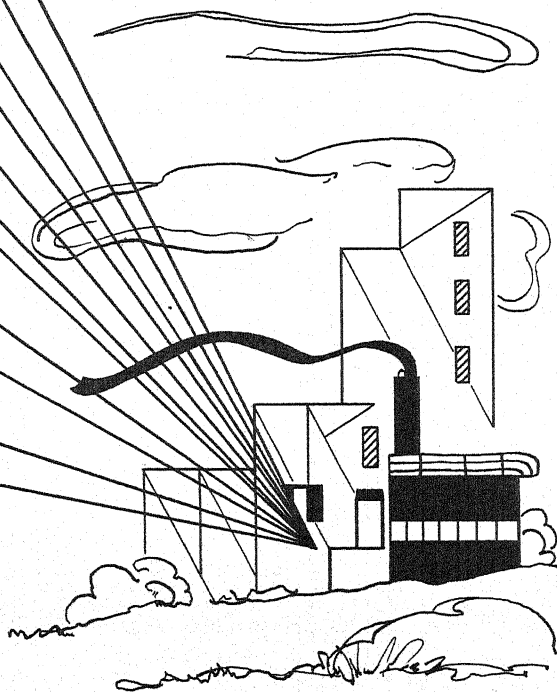
We learn to perceive most of our environment during childhood, for thereafter we stick pretty closely to the familiar, begrudging the effort it takes to perceive anything new. Perceiving the new costs effort because it means passing through several stages.



Anything entirely new appears at first as a completely meaningless entity. To make sense out of this entity we must begin by analyzing it. This is the same as saying that we must break it up into its elements which we can then learn to recognize individually.



As a final step we must reassemble these elements—find for them a relationship that would make them hang together. As this is achieved, the elements seem to lose their separate existence. They become fused; and, in their place, emerges a meaningful whole. This also is the sequence followed in the perception of the man smoking a cigarette on the preceding page.



Language and Perception

To some people a sailboat is a sailboat; to others it's a sloop, a yawl, or a schooner. This does not mean that the former are deficient in their ability to perceive differences in sailboats. It may mean merely that they have not used or are unfamiliar with the names of the different kinds of sailboats. In perception, language plays a very important role.

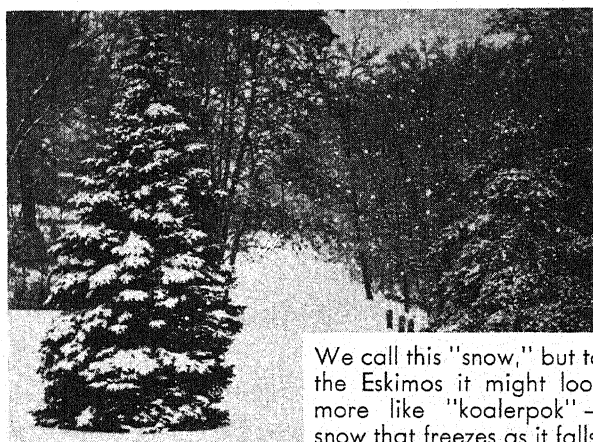
Words are labels through which we learn to recognize the boundaries and functions of the different items of our environment. "Horse is to run," says the three-year old. "Candy is to eat." What he is doing is separating objects serving different purposes—the first function of language. As he accumulates additional words, he is able to set off more and more objects, even similar objects, one from the other—to know where each "belongs." His power of analysis thus grows apace with his vocabulary, and his perception comes to depend increasingly on words as his manipulation of the environment broadens to include the complexities and abstractions of adult life.

In an experiment it was shown that persons who could at first discern only seven different shades of gray, were able to distinguish nine shades when they had learned the terms to differentiate these shades.

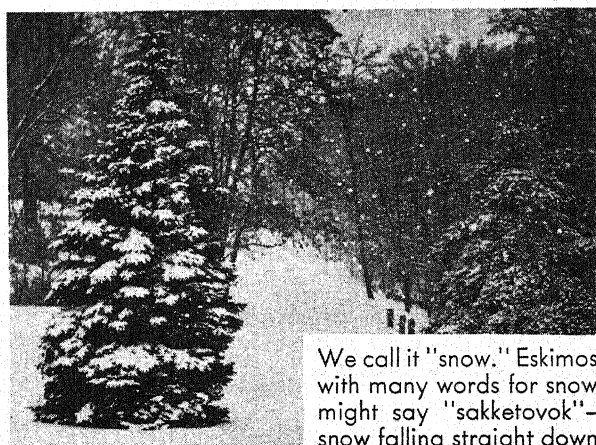
In short, the possession of words definitely sharpens perception (as exemplified by the Eskimos' perception of snow). But language also limits perception. It limits it to that for which we have a word. A netful of fish is just "fish" to most of us, though to the fisherman it may mean a good or a poor catch, depending on the kinds of fish he perceives in his net.



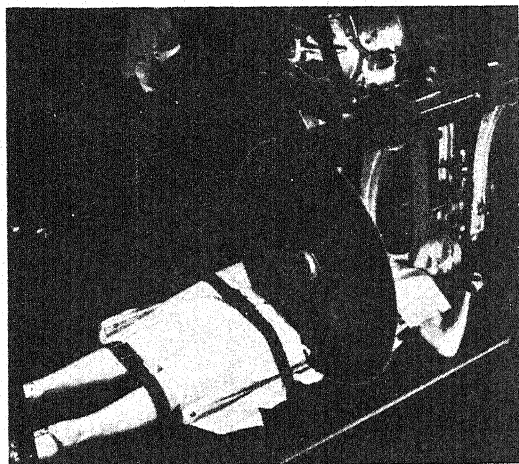
We call this "snow," but to the Eskimos it might look like "akkilokipok" — meaning snow that melts as it falls.



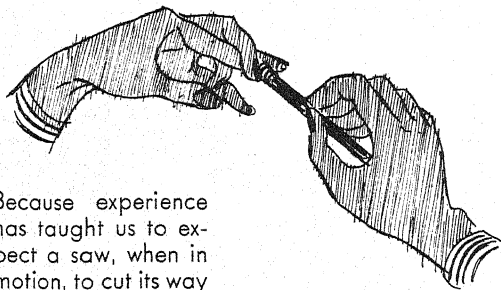
We call this "snow," but to the Eskimos it might look more like "koalerpok" — snow that freezes as it falls.



We call it "snow." Eskimos, with many words for snow, might say "saketovok"— snow falling straight down.



Harold B. Sommerfield



Because experience has taught us to expect a saw, when in motion, to cut its way into solids, we perceive the woman (above) as being unmistakably sawed in two. Because simultaneous pressure on certain portions of the skin of two fingers does not ordinarily come from a single object, we perceive one pencil, above, as two pencils (try it). Because we use angles as a prop in determining direction, we find ourselves misled in our perception of "file," the letters being really parallel.

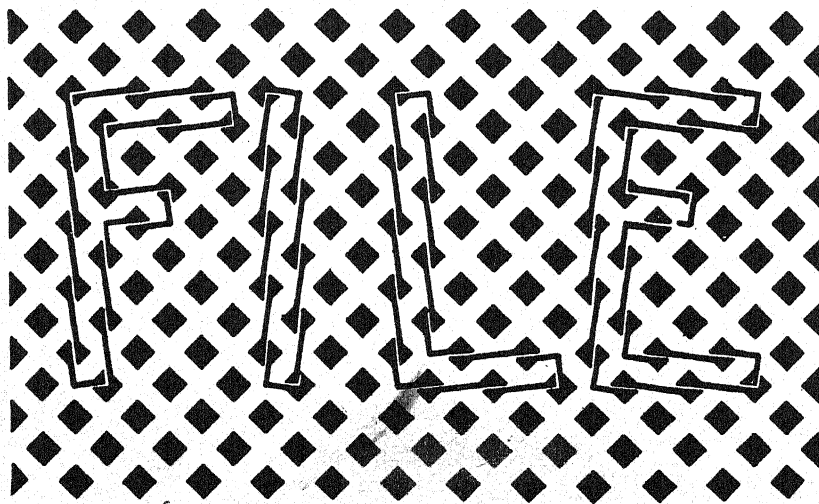
Illusions are Misinterpretations

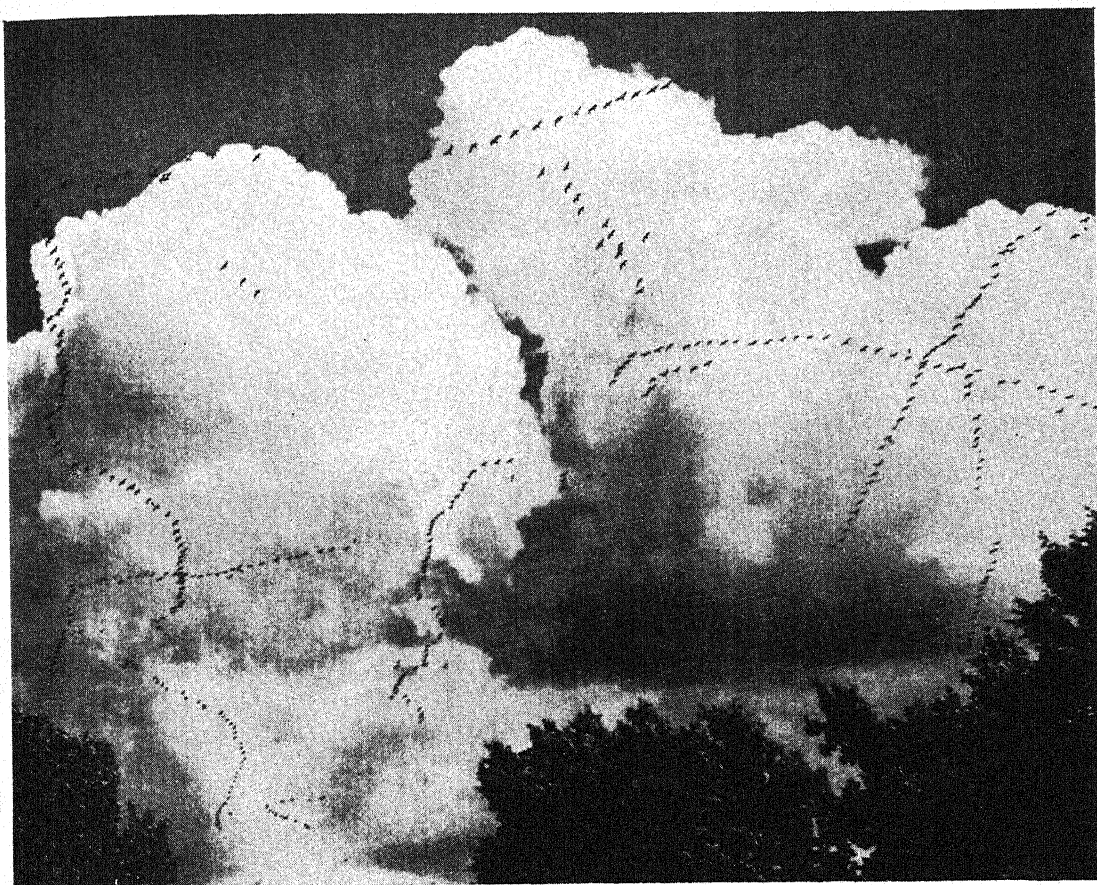
The sun does not really rise above the horizon. Telegraph poles do not rush past train windows. Voices heard in the movies do not come from the mouths of the characters shown on the screen. Perception, in other words, does not necessarily result in a true interpretation of one's environment. It may, instead, lead to a misinterpretation, commonly called an *illusion*.

Illusions arise chiefly because we do not stop to re-interpret each item of our environment every time we encounter it, but behave as if it had stayed the same, conforming to the general pattern of similar stimuli. This is why animals usually act as though night had come when there is an eclipse; why we brush carefully past a door marked "wet paint," even though the paint may by now be completely dry.

Our habits of response may, in fact, be so set as to make correct interpretation almost impossible. We simply cannot help per-

After Fraser





Nicholas Morant
Courtesy Life Magazine

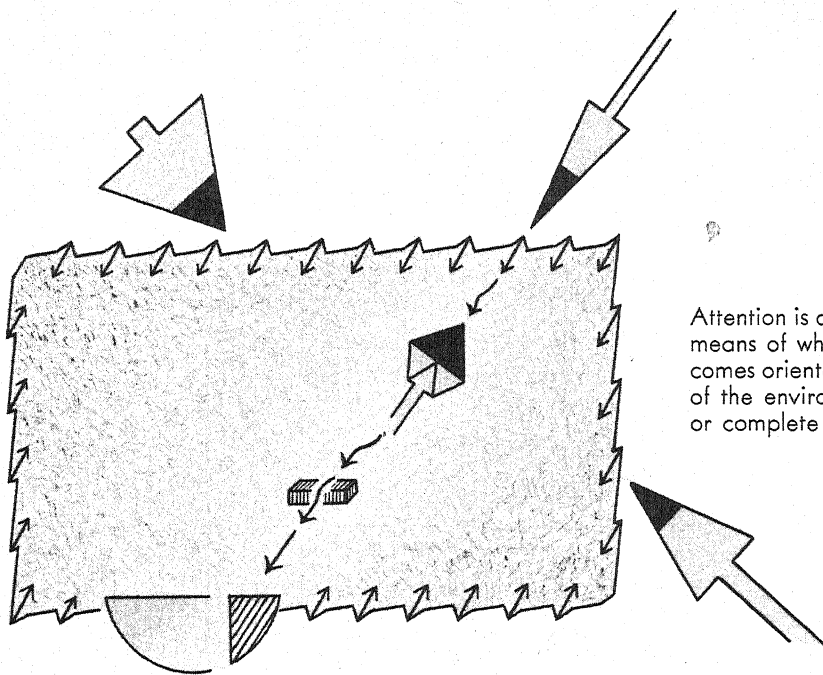
To a person living in a besieged city, harried by air raids, the picture above, unless carefully examined, can have but one meaning.

ceiving what we expect to perceive (see drawings at left). This is a common cause of illusions, but it is not the only one.

In addition to perceiving what we have come through habit to *expect*, we perceive to a large extent what we *want* to perceive. A lot of the time we simply read our own meaning into the environment. People in love, for instance, are proverbially "blind" in their estimate of each other, and parents are equally prone to depart from reality in judging their

children. Even though it won't fly, the miniature aeroplane seems "wonderful" to the boy who has built it; and the useless gadget is similarly "remarkable" to its inventor. But the subject of a really good caricature seldom sees a likeness to himself in the drawing, however evident this may be to everyone else.

For outside of perceiving in accordance with our innermost desires and inclinations, we also contrive *not* to perceive what we don't want to perceive. It's more convenient that way.



Attention is a selective function by means of which the organism becomes oriented toward one aspect of the environment to the partial or complete exclusion of the rest.

Attention expresses Drives and Habits

Very little of the world around us really catches our attention. The reason is that of all stimuli normally acting on us at any given moment, we perceive only some, and these we take in one at a time, selecting them from the lot.

The means by which the organism selects, bringing some phases of its environment within the spotlight of consciousness, is to some extent traceable to the sense organs (turning of eyes and head, sniffing, etc.). Such outward adjustments, however, do not in themselves produce attention. We may remain perfectly motionless, seemingly intent on scrutinizing the newspaper, and yet inwardly "prick up our ears" if the conversation takes an interesting turn. It is this inward adjustment that produces attention, and it involves several factors. One of these is that thresholds even for identical responses vary constantly, causing perception to fluctuate (see p. 48). This can be verified by holding a watch at arm's length and noticing how its ticking will keep vanishing and reappearing; or by observing the more complicated process involved in the perceptual shifts from the young to the old woman on page 65. Certain phases of our environment are, in other words, constantly being emphasized, causing a division of what we perceive into that



which stands out from the rest (*figure*) and that which sinks into the background (*ground*). It is in the former group that they find those stimuli which claim our attention; and they are mainly of two kinds: those that are so strong, novel, or insistent that they vanquish all their competitors (this being the reason why the phone is made to ring intermittently); and those stimuli that are

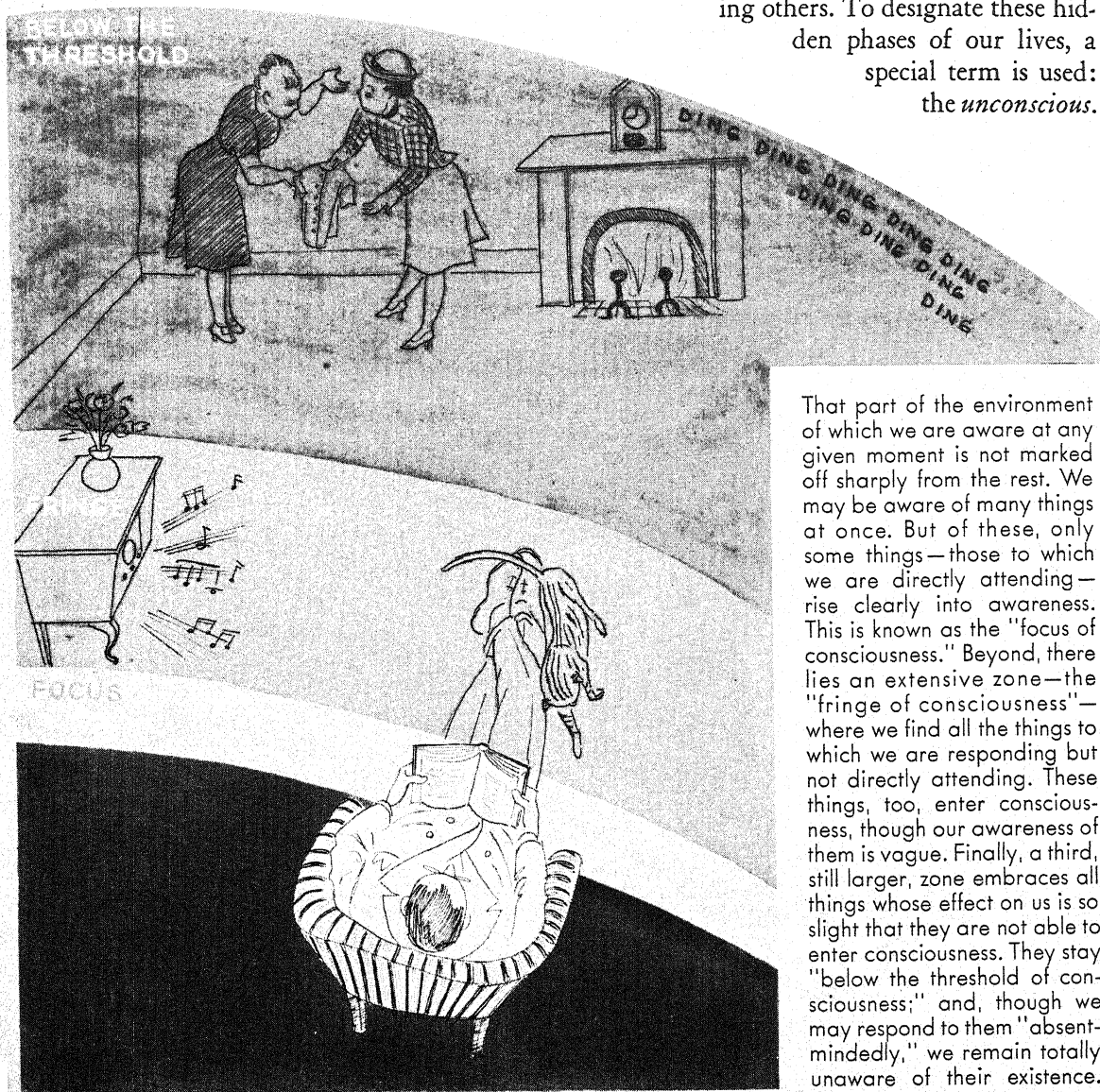
in line with our drives and so meet with little resistance. (We listen intently to a quarrel next door because we are curious.) Attention, thus, is not a quality inherent in the individual. It is a function that appears if the conditions for it are right. Hence, to say that Smith "holds his attention" on his work is really incomplete. It is his work, if it interests him, that "holds Smith's attention."

Harris W. Nowell—European

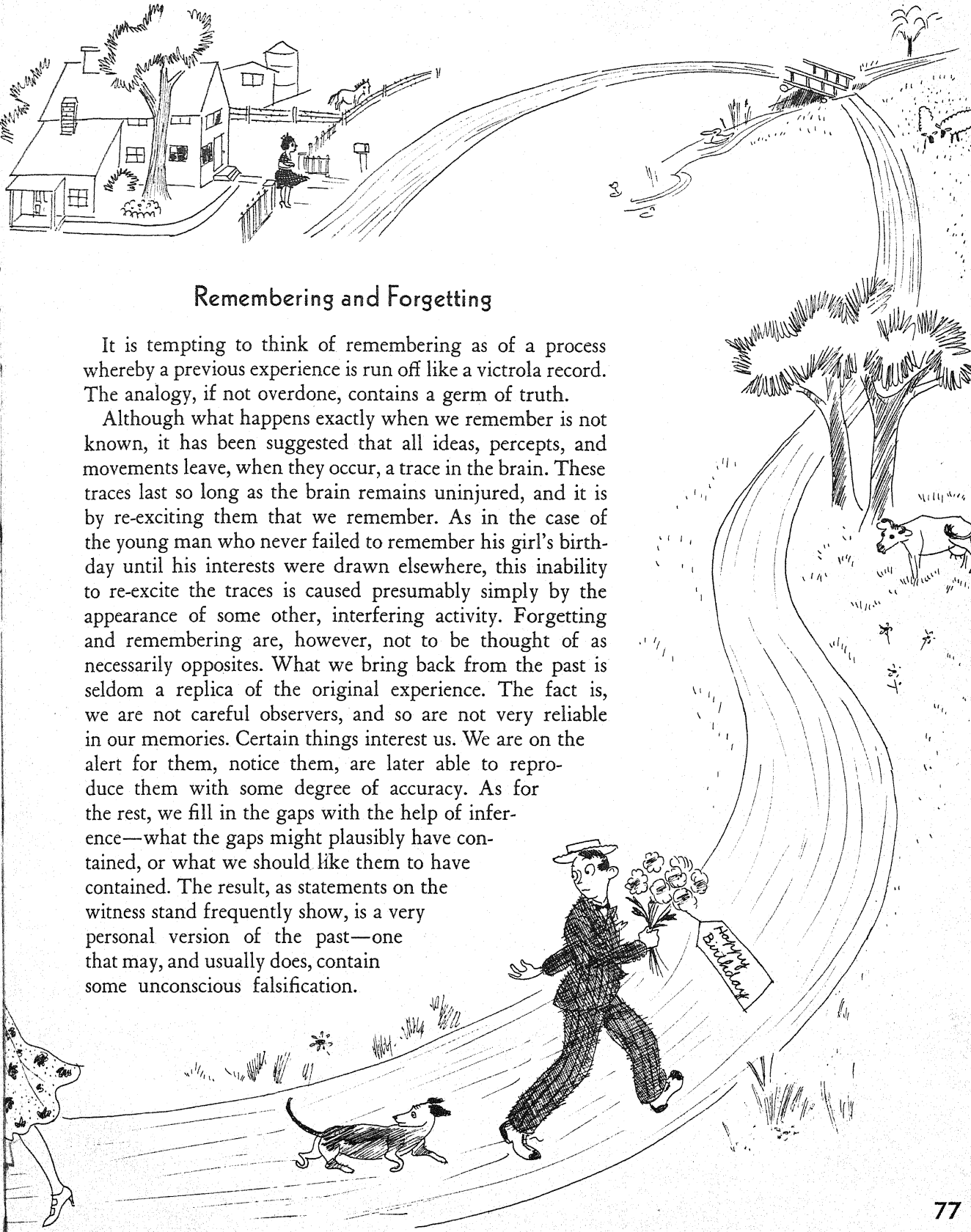


The Unconscious A searchlight playing on a field or meadow reveals only part of what lies hidden in the night. Likewise, only a part of what goes on inside of us is ever brought within the range of consciousness. We are not aware, for instance, of such involuntary processes as digestion. We may not be aware of much that we adjust to, like the irregularities in the road guiding our footsteps. We are also usually unaware of those impulses

to action that run contrary to our code of conduct, for we bar them from consciousness. The fact that these sources of stimulation are not present in, or accessible to, consciousness, does not mean, however, that they do not exist. They not only exist: they are at least as important in shaping our lives as the processes of which we are aware. For consciousness, after all, reflects only some of the many things that go on inside of us. Others are concealed from it, yet we know of them by observing others. To designate these hidden phases of our lives, a special term is used: the *unconscious*.



That part of the environment of which we are aware at any given moment is not marked off sharply from the rest. We may be aware of many things at once. But of these, only some things—those to which we are directly attending—rise clearly into awareness. This is known as the "focus of consciousness." Beyond, there lies an extensive zone—the "fringe of consciousness"—where we find all the things to which we are responding but not directly attending. These things, too, enter consciousness, though our awareness of them is vague. Finally, a third, still larger, zone embraces all things whose effect on us is so slight that they are not able to enter consciousness. They stay "below the threshold of consciousness;" and, though we may respond to them "absent-mindedly," we remain totally unaware of their existence.



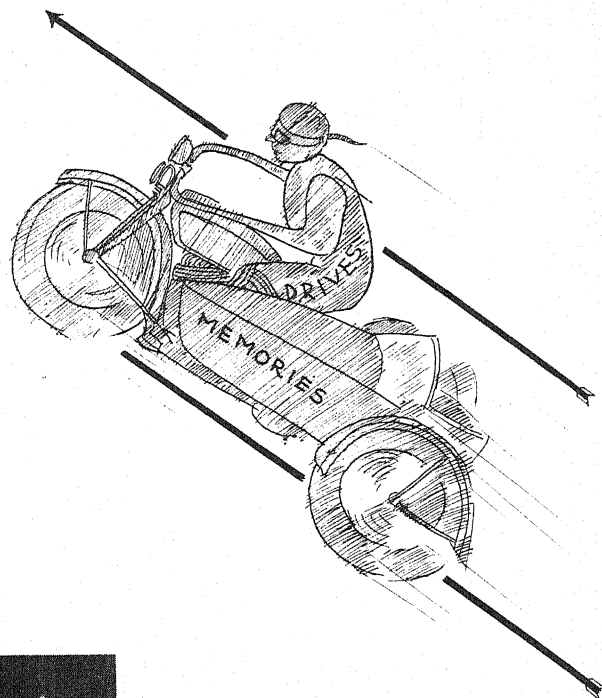
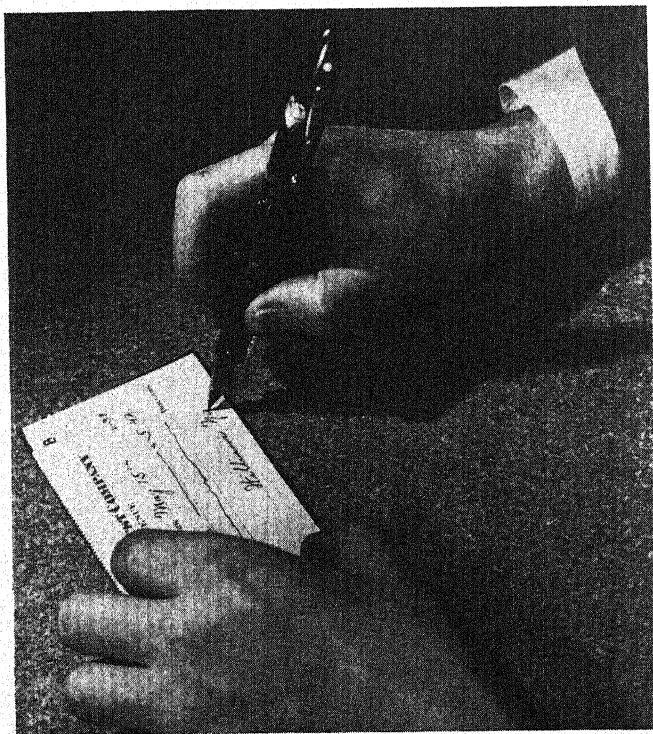
Remembering and Forgetting

It is tempting to think of remembering as of a process whereby a previous experience is run off like a victrola record. The analogy, if not overdone, contains a germ of truth.

Although what happens exactly when we remember is not known, it has been suggested that all ideas, percepts, and movements leave, when they occur, a trace in the brain. These traces last so long as the brain remains uninjured, and it is by re-exciting them that we remember. As in the case of the young man who never failed to remember his girl's birthday until his interests were drawn elsewhere, this inability to re-excite the traces is caused presumably simply by the appearance of some other, interfering activity. Forgetting and remembering are, however, not to be thought of as necessarily opposites. What we bring back from the past is seldom a replica of the original experience. The fact is, we are not careful observers, and so are not very reliable in our memories. Certain things interest us. We are on the alert for them, notice them, are later able to reproduce them with some degree of accuracy. As for the rest, we fill in the gaps with the help of inference—what the gaps might plausibly have contained, or what we should like them to have contained. The result, as statements on the witness stand frequently show, is a very personal version of the past—one that may, and usually does, contain some unconscious falsification.

A "heavy" date is seldom forgotten, but there is nothing unusual about failing to remember a dinner engagement that promises to be a bore. The reason is that our memories are closely tied to our drives and are, as such, largely expressions of our wishes and interests. Easiest to remember are therefore experiences—provided they are pleasant—in which we played some personal part. As for the unpleasant, we deal with it in a high-handed manner, either modifying its objectionable features, or failing to revive it altogether. This is why most people are prone to sigh for the "good old times," the past appearing to them usually much rosier than it really was.

William Nauheim



When we speak of remembering, we usually have conscious memories in mind—such as the act of recalling a telephone number. The process, however, may be at work without our being aware of it, as is indeed always the case in responses that have become second nature. Most of these are so thoroughly learned that they no longer require our attention. This is why they occur without rising into awareness; why we therefore call them automatic. But in making such responses—whether in signing our name, in buttoning our clothes, or in playing the piano—what we are doing is utilizing past experience for present purposes, essentially as we do when we "remember."

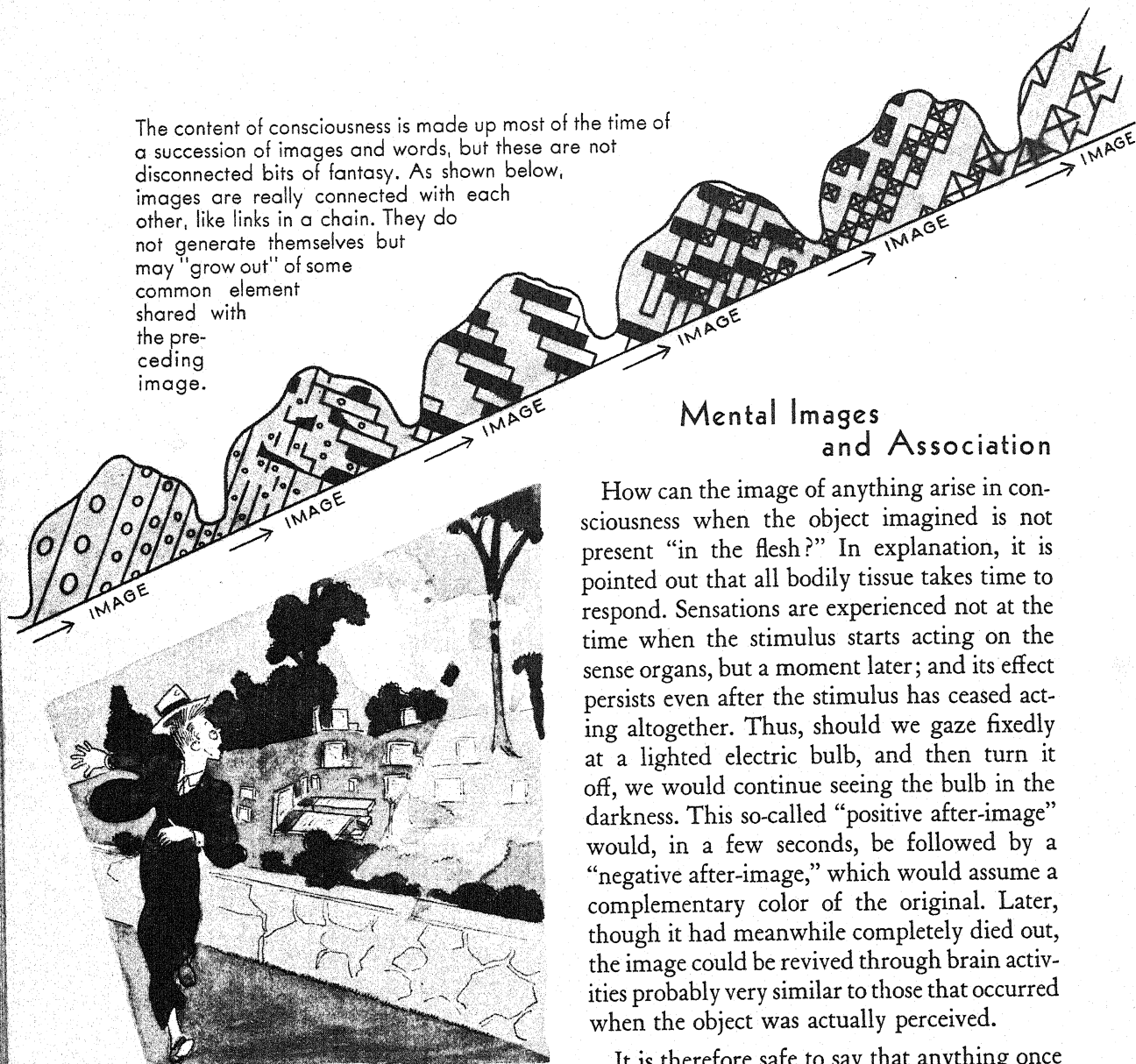
Remembering and Association

One thing suggests another. Mistletoe brings back visions of Christmas; it also suggests kissing. It does not usually make one think of the theory of relativity or of Thanksgiving turkey. There is a reason for this. It is that although all of one's perceptions, images, or thoughts may act as stimuli, reviving other experiences, the range of such reviving is limited. If mistletoe makes you think of kissing, it is only because in your experience there was once established some connection between the two. Hence, you are able to re-establish the connection, turning it from a dormant to an active state. This re-establishment of a connection in the brain, linking in consciousness two or more items of the past, is called *association*; and the process is a clue to the way most conscious remembering occurs.

Are some things easier to "associate" than others?—therefore easier to learn and easier to remember? They are. Things that contain similar elements, like the phone number *Weather 6-1212*, are easiest to remember. So are things that form a pattern, like several related words or tones when they are a part of a verse or tune. Otherwise, the things most readily recalled are those that have been brought into many relationships. This is why the name of a neighboring town is easily remembered, whereas the name of a town on the Congo is not. The former is linked with friends, trips, community interests, and a thousand other things. The latter may be connected merely with some routine day in school and one's geography text, neither one of which is probably any longer connected with any part of one's life today. From this it follows that "improving" one's memory is largely a matter of training oneself to form as many connections as possible, so that the thing desired appears in several contexts.



The content of consciousness is made up most of the time of a succession of images and words, but these are not disconnected bits of fantasy. As shown below, images are really connected with each other, like links in a chain. They do not generate themselves but may "grow out" of some common element shared with the preceding image.



Mental Images and Association

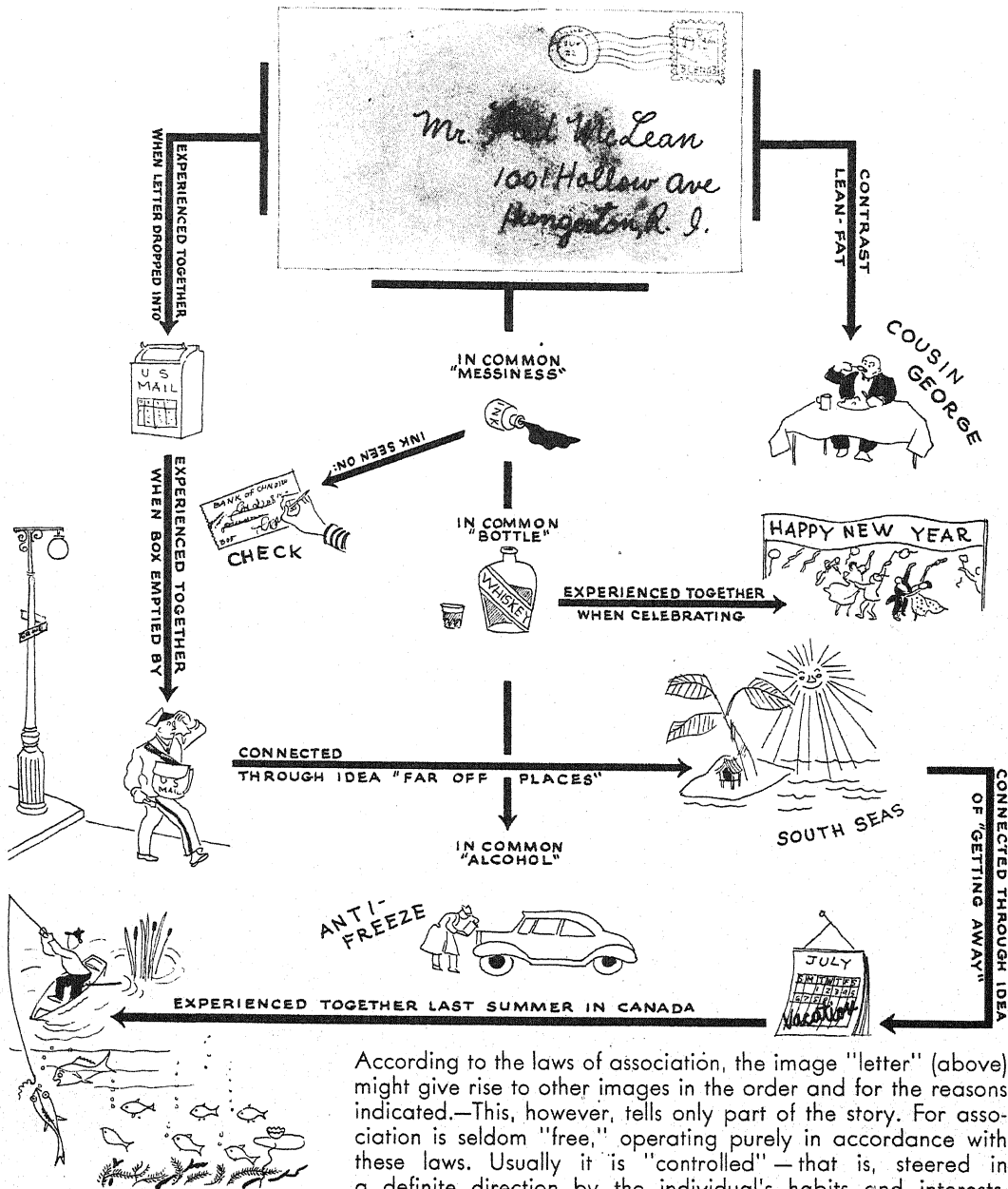
How can the image of anything arise in consciousness when the object imagined is not present "in the flesh?" In explanation, it is pointed out that all bodily tissue takes time to respond. Sensations are experienced not at the time when the stimulus starts acting on the sense organs, but a moment later; and its effect persists even after the stimulus has ceased acting altogether. Thus, should we gaze fixedly at a lighted electric bulb, and then turn it off, we would continue seeing the bulb in the darkness. This so-called "positive after-image" would, in a few seconds, be followed by a "negative after-image," which would assume a complementary color of the original. Later, though it had meanwhile completely died out, the image could be revived through brain activities probably very similar to those that occurred when the object was actually perceived.

A hallucination is a mental image so vivid as to be mistaken for something really present to the senses. Under conditions of drowsiness or strain, this lapse occurs even in normal persons, for the brain activity involved is very similar to that generated in ordinary sight. The phenomenon is not limited to sight. One may hear imaginary voices, feel imaginary bugs, even smell imaginary odors.

It is therefore safe to say that anything once experienced may occur again—as indeed it does in the succession of images and words that constantly pass through consciousness. Nor is the order of appearance of these various images a matter of chance. It is, on the contrary, strictly predetermined, for in the main it follows certain definite laws—the *laws of association*—as shown and explained on the page opposite.

One image may follow another by virtue of some link between them, namely:

1. that both have been experienced together in time or space.
2. that one image in some way resembles the other.
3. that the two images bear a relation of opposition or contrast.

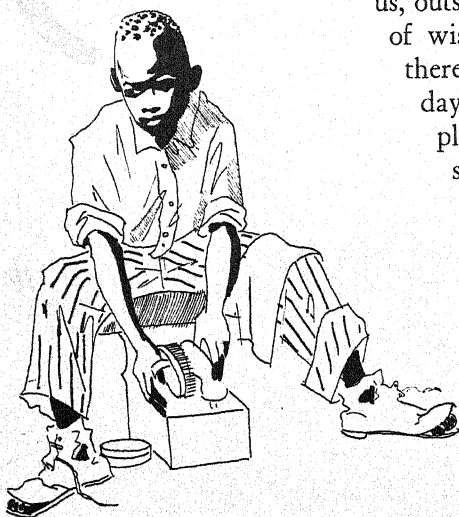


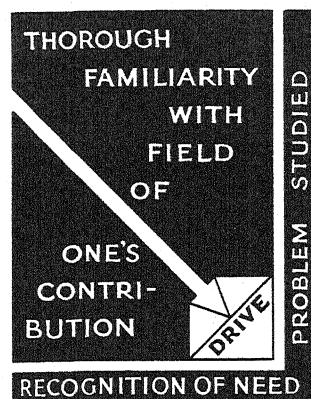


Imagining — a means to an end — an end in itself

In the course of daily existence many wishes cannot be at once realized. When this happens, a favorite way out is to seek satisfaction by shortcutting toward the unattainable. This is achieved by manipulating images containing bits of past experience until the things desired are invoked. The name of this device for the attainment of goals that lie beyond immediate reach is *imagination*, and the process is a direct expression of the individual's needs and interests, subject to all the limitations of personal experience.

In order to imagine anything, we must have previously taken in through the senses all the ingredients of the thing imagined. These can then be thrown together in almost any combination. But we cannot combine what we haven't experienced. Thus, it is a horseless carriage, not today's streamlined car, that is produced by the manufacturer of early automobiles. And this, too, is the reason why a storyteller, depicting life on Mars, spins his yarn not really about Mars, but about human experience a bit rearranged. From this it follows that the range of one's imagination is closely linked both with richness of personal experience and with mental growth. Animals imagine little or nothing, and the same is true of the idiot. But average people imagine a good deal. For imagining to most of us, outside of being a means to an end, is also a technique of wish fulfilment which is in itself satisfying and is therefore indulged in for its own sake. The inveterate day dreamer does this with a vengeance, spending many pleasurable hours in a world of fancy created by himself. Nor is he necessarily wasting time. By temporarily removing himself from a too direct contact with his problems, a person may be helped to gain a fresh outlook and may be consequently led in time to a new, fruitful grappling with reality.





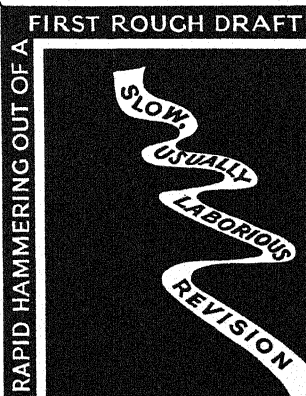
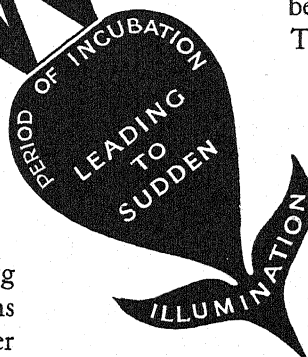
Training the Imagination for a Purpose

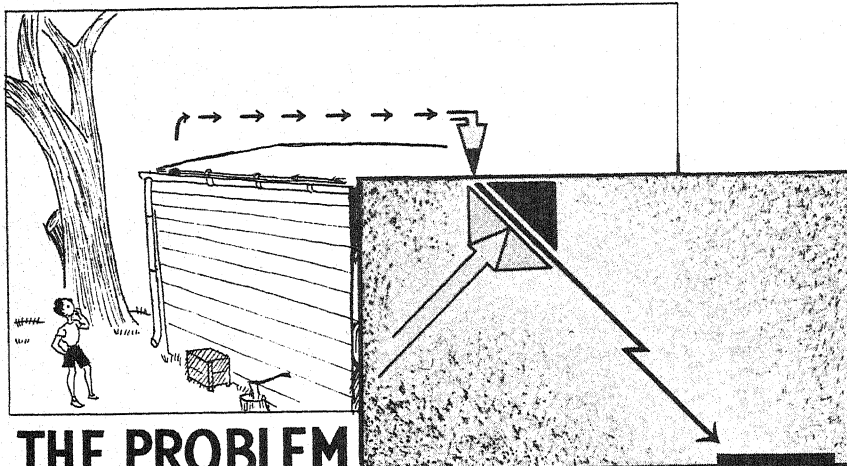
The creative worker differs from the day dreamer in that he trains himself to produce results in a specific field, with imagination as his tool. This he does not by waiting hopefully for a brain storm, but by putting himself deliberately in the path of inspiration, as described below. In this way he is able to draw consistently from a vast storehouse of past experience, ordinarily out of reach of consciousness; and, if he is an Edison or a Beethoven, at times to mobilize resources of tremendous scope. In this creative process, dissociation plays an important role. It frees part of the mind to concentrate on the fundamentals of the problem, releasing it from the grip of what may have been a wrong mode of attack.

Thus, when the problem reenters consciousness, it is suddenly seen in a new light—and here we have a clue to the origin of most of our insights and intuitions.

The Course of invention

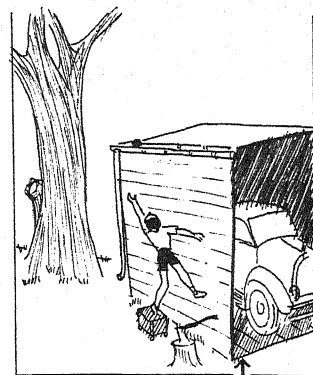
According to popular belief, invention is the act of pulling something out of thin air. Such a belief, needless to say, is a superstition. This is apparent from the fact that a striking similarity of psychological factors runs through all creative endeavor. Whether he invents a new machine, a new piece of music, or a new way of selling soap, the creative worker passes almost invariably through the following stages: (1) He starts with a drive—an interest in some field which leads him to familiarize himself with it. Hence, (2) he becomes aware of specific needs and (3) studies a specific problem from all angles, struggling to solve it. (4) After periods of alternating effort and relaxation—indeed, often after sleep—he gets a sudden illumination and (5) quickly hammers it out (lest he lose what may be only a glimpse of the solution). (6) Slowly he labors over his idea, perfecting it, until it becomes, at last, a finished product.





THE PROBLEM

AND THE THREE WAYS OF TACKLING IT.



1A

I. MOTOR TRIAL AND ERROR (OVERT STRUGGLING)

II. MENTAL TRIAL AND ERROR (REHEARSING)

III. LOGICAL THINKING (REASONING)

Thinking and Problem Solving

Every single day, a good many problems thrust themselves upon us from all sides. Of these, some are more difficult than others, involving situations to which the answers cannot be found offhand. When this happens, our ability to think serves us in good stead. For thinking represents one important way of handling a problem with maximum effect.

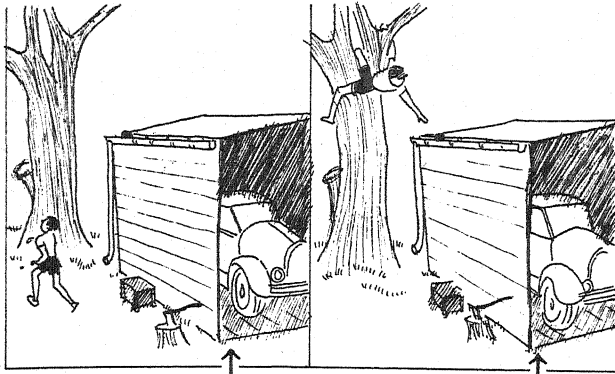
Three levels of problem solving exist, and the first involves no thinking at all. It consists merely of trying out, haphazard fashion, the various possibilities that offer themselves—until the right solution is eventually stumbled upon. This is known as “motor trial and error,” and the typical example is furnished by a person in a hurry who, having mislaid his key, plunges blindly through his pockets and desk drawers, looks under the rug, and finally gives up—or finds the object (under his hat).

The second level of problem solving, called “mental trial and error,” involves a primitive form of thinking. It consists of rehearsing mentally the various possibilities which present themselves—of running over them mentally before acting—and discarding those that seem obviously not worth pursuing (instead of struggling with them physically). This procedure saves time and effort. However it often dovetails into “motor trial and error,” for the man who has misplaced his key usually winds up struggling with his pockets, anyhow, even though he may have first discarded the idea of looking in the desk or under the rug.

The third, and highest, level involves a radically different approach. It entails reasoning—that is, thinking logically. This involves the ability to add two and two and make four. Hence, when reasoning comes into play, the solution is usually sought through reference to past experience (where did I last see my key?—who might know?) rather than from any of the possibilities apparent to the senses. In practice, nobody adheres consistently to any one of these three procedures. They interpenetrate, for we all usually alternate between them depending on the need and the mood of the moment.

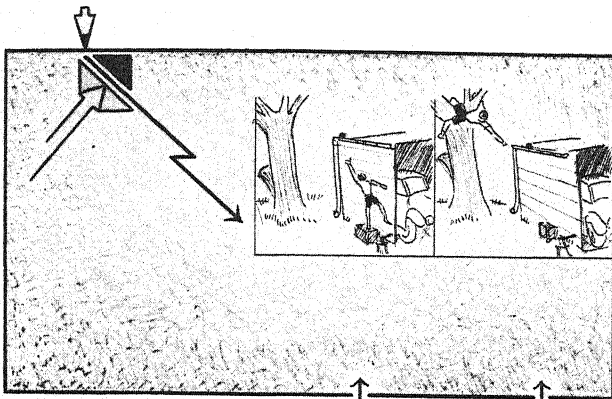
KEY TO THE CHART-DIAGRAM

The boy asks himself: "How shall I get my ball back from the roof of the garage?" If he tackles the problem by way of motor trial and error (I) he will presumably climb on the box (1a) as well as on the tree (1b and 1c) before chancing in the garage where he will find a ladder. Should he proceed by way of mental trial and error (II) he will, before acting, visualize the box as too low (2a) and the tree as too far removed (2b) thus avoiding climbing on either. This, however, will not preclude other wrong moves which he may still make instead of proceeding to the solution (x, y, z) as shown. Should the boy approach the problem by way of logical thinking (III) he will reason as indicated (3a) and will go directly to the garage and the solution.



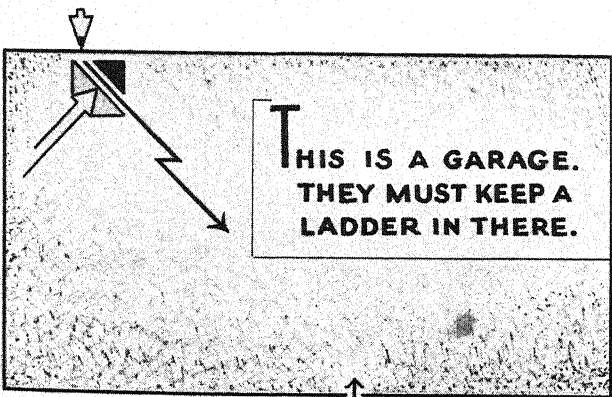
1B

1C



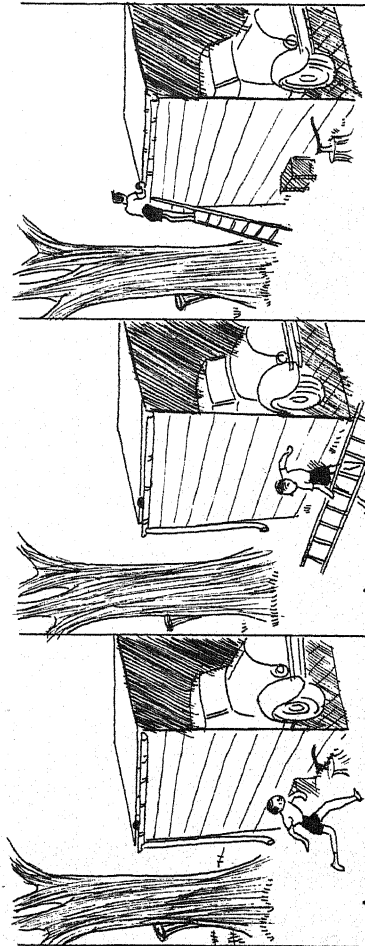
2A

2B



3A

THIS IS A GARAGE.
THEY MUST KEEP A
LADDER IN THERE.



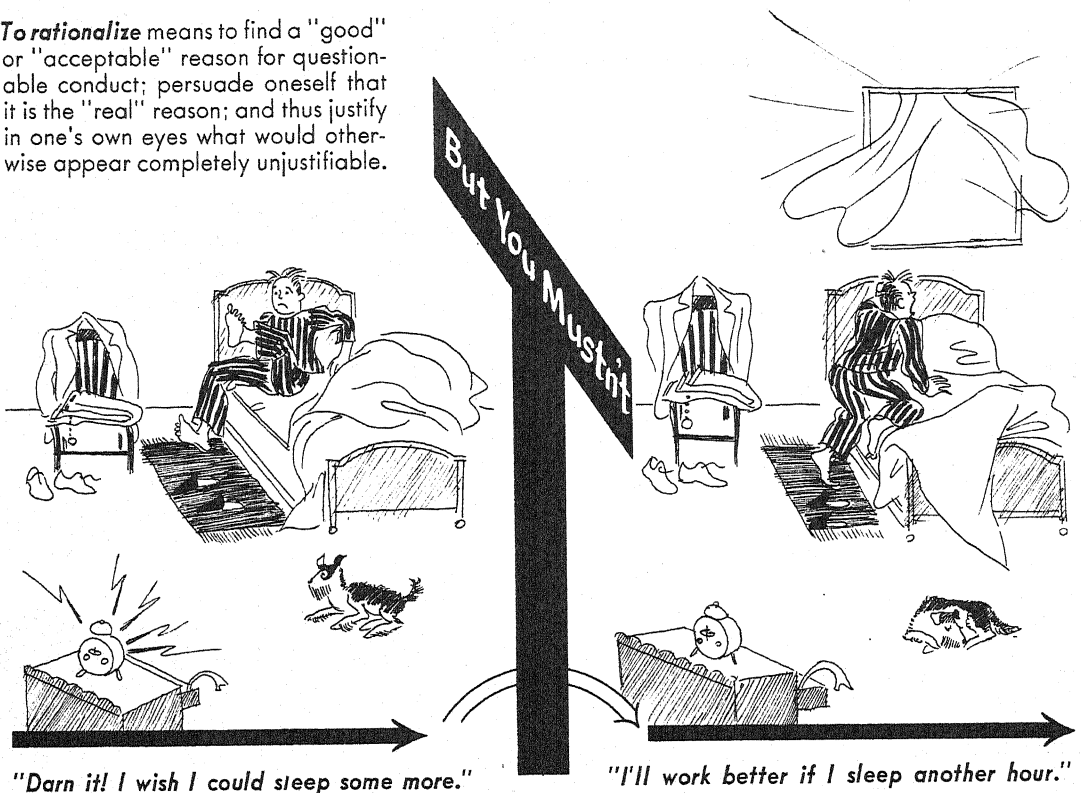
z

y

x

THE SOLUTION →

To rationalize means to find a "good" or "acceptable" reason for questionable conduct; persuade oneself that it is the "real" reason; and thus justify in one's own eyes what would otherwise appear completely unjustifiable.



Solving a problem usually involves thinking, but this is not the only time we think. We think, too, for the sheer pleasure of thinking, and we think when looking for excuses to do something we should not do. This latter form of thinking, called *rationalizing*, is a convenient way of getting around one's better self without seeming to do so. In little things, this device (in which most of us are extremely adept) is relatively harmless. But when it involves the welfare of others, it may and often does cause untold misery and unhappiness.

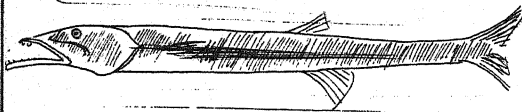
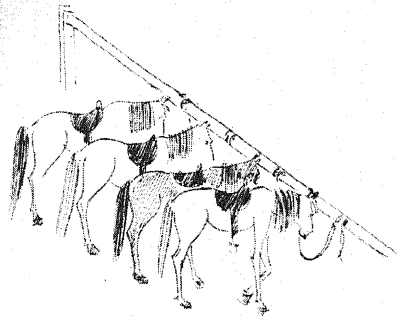
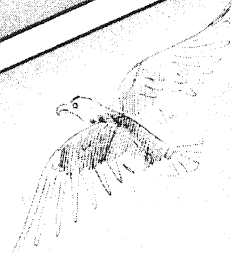
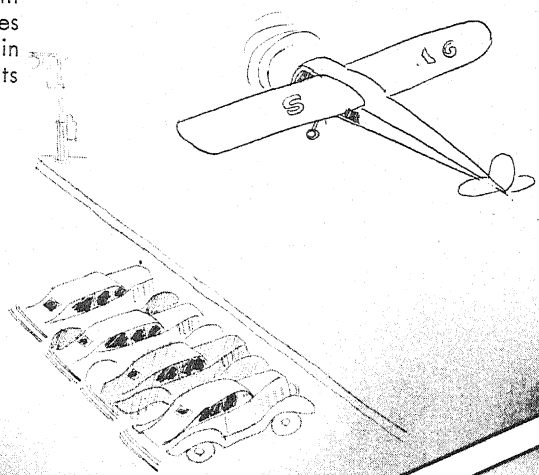
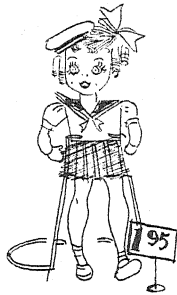
This habit of self-deception invades our whole life and colors our entire relationship with our fellow men. We resort to it

because we are constantly driven by inner and outer compulsion to perform actions that would undermine our self-respect. We overcome this difficulty by rationalizing and thus remain at peace with ourselves.

The "white lie" in social usage, the "bad deed done for a good end," and the deliberate staying away from the polls "because one vote more or less makes no difference," are well known cases of rationalization. Failing to show up at the dentist's because one is "too busy" or straining the budget with a better radio than one can afford "because it will be cheaper in the end," are two equally common and equally familiar examples of the same mental process.

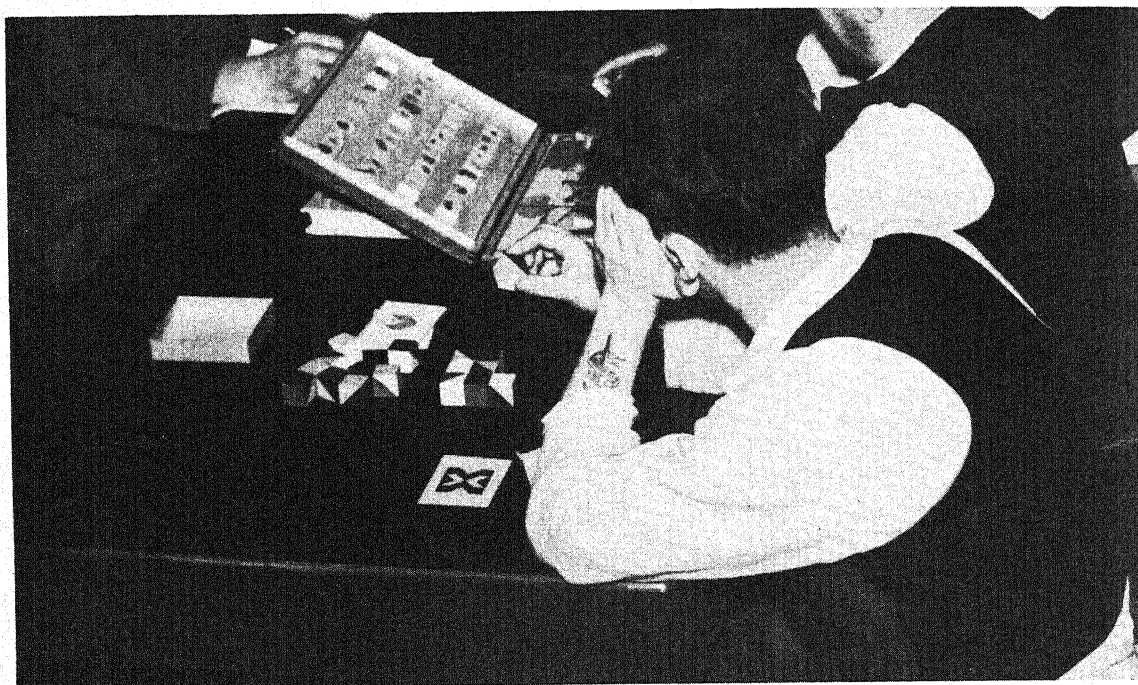
Logical thinking is a human tool closely linked with the invention of language. For language enables man to identify even intangible elements possessed in common by several things; to group these elements

INANIMATE



ANIMATE

under a single heading expressed by a word. Such a word, when naming a quality shared by many objects, is called a "concept;" and it is through the use of such concepts that most thinking is possible.



E. Lynch - N. Y. World-Telegram

The man shown is an inmate of a penitentiary. His competence in assembling the blocks which he is han-

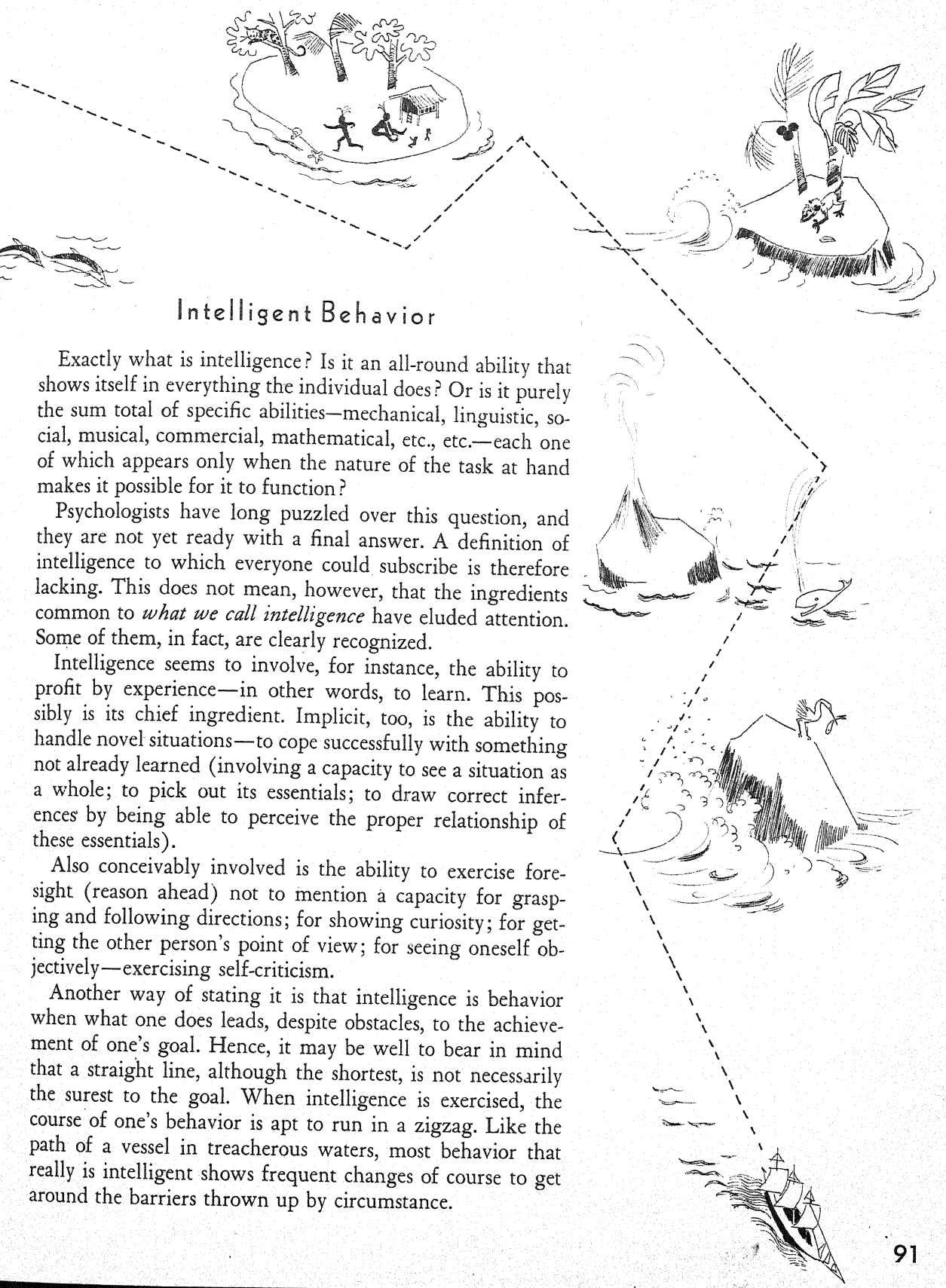
dling, when seen in relation with other tests, will help to reveal his mental age and his special aptitudes, if any.

Intelligence Tests Early in this century the French Government asked the psychologist Binet to devise tests that would show which of the children unable to keep up in school were stupid, and which just lazy. In this way intelligence tests got their start, and their use has since extended to many fields—colleges, personnel work, the Army, etc.

Although such tests are known as *intelligence* tests, it is uncertain just how much of a person's intelligence they do measure; for no one has as yet been able to make sure just what "intelligence" really is. Actually, what the tests undertake to do is to "place" the individual's mental capacity with reference to what is considered normal for his age in his group—and that is all. This applied, of course, mainly to children, for the tests were originally devised to show mental growth as it occurs during childhood. Adapting the tests for use with adults has been another story—chiefly because mental

growth slows up as a child approaches his teens and stops completely when he is around twenty. Later gains are confined to added experience, not increased "intelligence." This has forced psychologists, when measuring adults, to consider them all, arbitrarily, as of the same chronological age, namely, fifteen—the I. Q.'s of all adults being therefore roughly comparable.

The ratings are obtained, first, by securing the subject's mental age (as revealed either through oral or written assignments, or through tasks calling for the perception and manipulation of objects). This figure is then divided by the subject's chronological age. The result is what is known as a person's I. Q. (intelligence quotient); and the tests are so devised that 100 means "average." With an I. Q. of 125, a person falls within the population's brightest 6%. If he registers between 50 and 70, despite school opportunities, he is probably a moron; if between 25 and 50, he is an imbecile.



Intelligent Behavior

Exactly what is intelligence? Is it an all-round ability that shows itself in everything the individual does? Or is it purely the sum total of specific abilities—mechanical, linguistic, social, musical, commercial, mathematical, etc., etc.—each one of which appears only when the nature of the task at hand makes it possible for it to function?

Psychologists have long puzzled over this question, and they are not yet ready with a final answer. A definition of intelligence to which everyone could subscribe is therefore lacking. This does not mean, however, that the ingredients common to *what we call intelligence* have eluded attention. Some of them, in fact, are clearly recognized.

Intelligence seems to involve, for instance, the ability to profit by experience—in other words, to learn. This possibly is its chief ingredient. Implicit, too, is the ability to handle novel situations—to cope successfully with something not already learned (involving a capacity to see a situation as a whole; to pick out its essentials; to draw correct inferences by being able to perceive the proper relationship of these essentials).

Also conceivably involved is the ability to exercise foresight (reason ahead) not to mention a capacity for grasping and following directions; for showing curiosity; for getting the other person's point of view; for seeing oneself objectively—exercising self-criticism.

Another way of stating it is that intelligence is behavior when what one does leads, despite obstacles, to the achievement of one's goal. Hence, it may be well to bear in mind that a straight line, although the shortest, is not necessarily the surest to the goal. When intelligence is exercised, the course of one's behavior is apt to run in a zigzag. Like the path of a vessel in treacherous waters, most behavior that really is intelligent shows frequent changes of course to get around the barriers thrown up by circumstance.

Many people assume that "intelligence" is wholly innate; that certain individuals are just naturally bright—others naturally dumb; furthermore, that individuals belonging to some racial and cultural groups are innately more intelligent than those belonging to others.

Psychologists incline toward a more cautious view. They frankly do not know how much heredity has to do with a person's mental capacities, but they suspect that environmental influences, insofar as such influences provide or withhold opportunities for development—cultural, social, educational, etc., etc.,—may be as important as native endowment in determining the extent of the individual's mental growth. In the light of current research, what we term "intelligence" may be to a considerable degree really acquired—acquired not in equal degrees by all, but according to the opportunities and innate capacities of each individual. In the light of unprejudiced fact, there may be no differences in mental capacity due to differences in racial and national origin.

Many recent experiments support this view. These experiments suggest, for instance, that the mental capacity of American children, generally, bears a consistent relation to the cultural environment—hence, to the economic status—of their parents; that American Negro children and American white children score equally whenever their environment approximates equality of opportunity; that people of different countries subdivide themselves not in terms of racial and national origin but in terms of where they live—the city people everywhere, especially those living in large cities, being the more "intelligent," those living in the country, the less "intelligent."

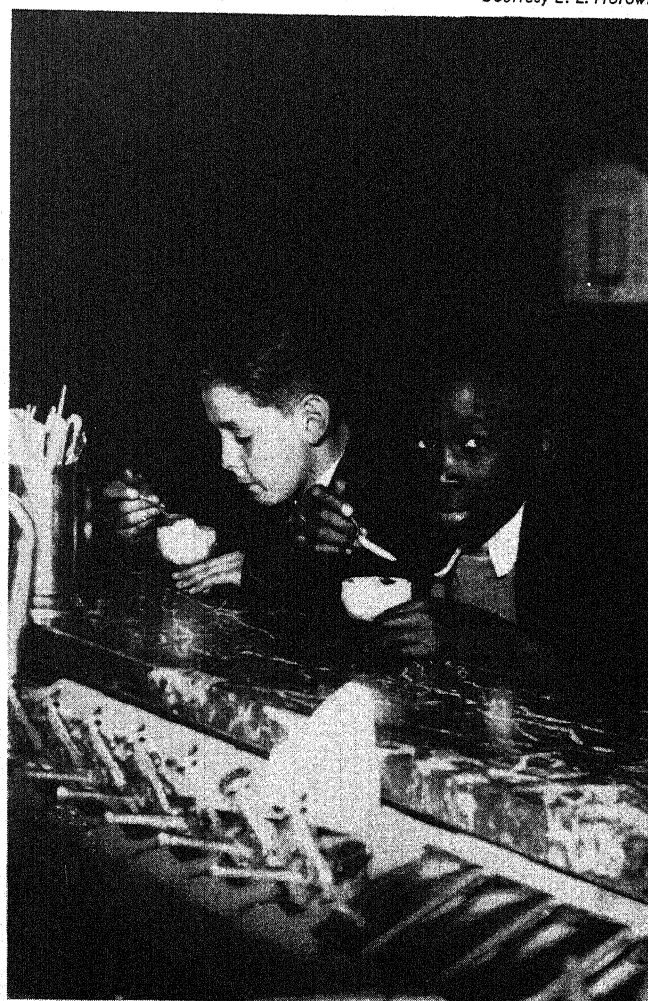
PART IV

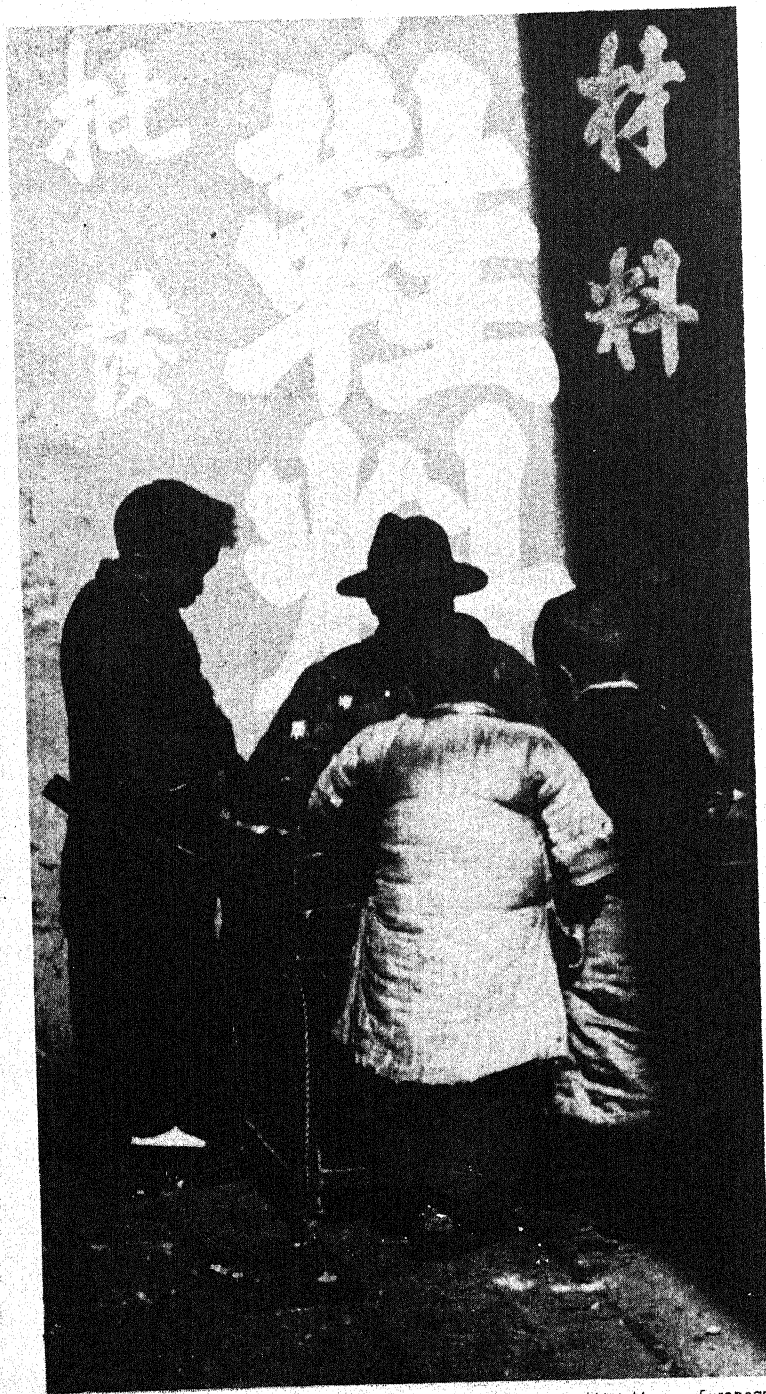
OURSELVES
AND SOCIETY

What Have These
Two in Common?

(see page 94)

Courtesy E. L. Horowitz





Hutchinson — European

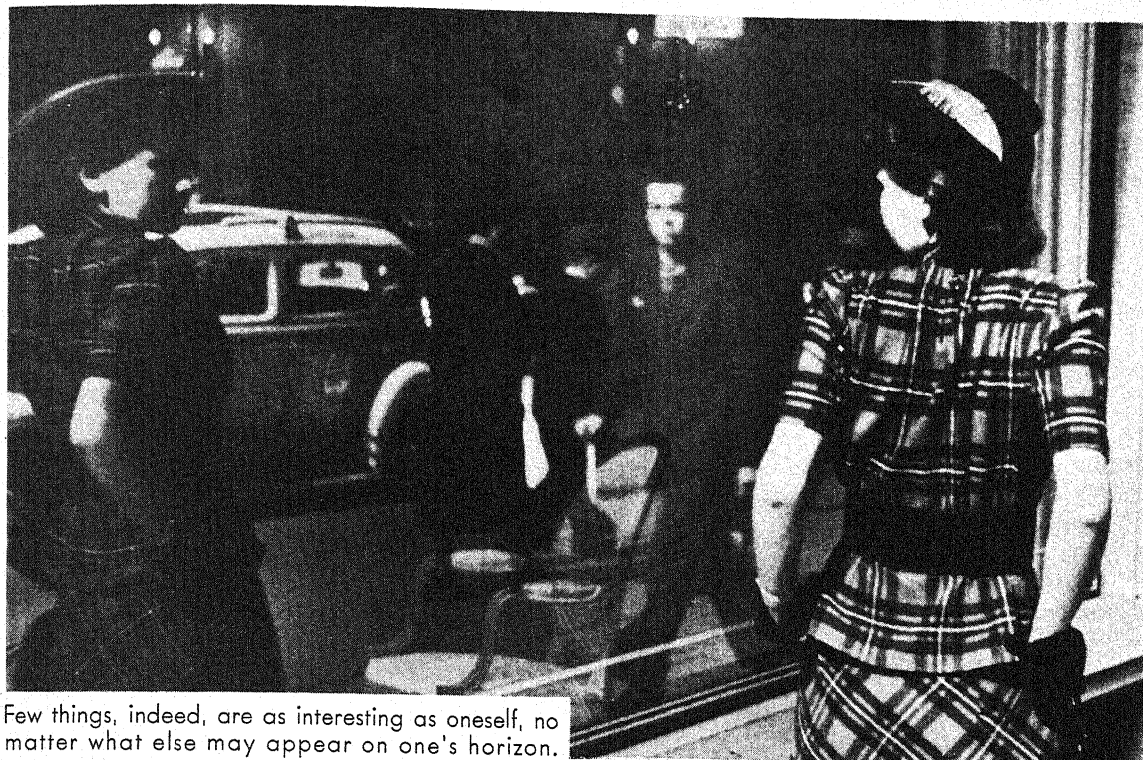
Chinese children; American children; Arab, Mexican, Negro, Eskimo children—they all have certain things in common that make them very much alike; that also make them less and less alike as they grow older.

What all children have in common

All children, wherever born, have certain things in common. First, by virtue of being human, they all possess largely the same muscular, glandular, and nervous equipment. Since the overwhelming majority are "average specimens," this equipment, in most of them, admits of basic similarities in growth, learning, and performance.

Second, all children are confronted with the same fundamental problem. The environment they find themselves in—an environment they must learn to face—is not merely physical but also social. This means that they must learn to play the game as it is played in the group into which they were born. Cultural groups, however, differ greatly in their ways. Hence, children born into different environments learn different things and develop along different lines.

Third, all children travel this road in company, for they are assisted in making their adjustment by adults, chiefly their parents. This means that they are helped over many rough bumps which they would be too weak or inexperienced to tackle by themselves. It means, also, that they are molded, while still too young to exercise their judgment, to think, act, and believe as do the other members of their group. By this early training they will be influenced throughout life.



Few things, indeed, are as interesting as oneself, no matter what else may appear on one's horizon.

Karger - Pix

How the "self" develops A child, eight or nine months after he is born, still has no clear notion of himself. He hears himself yelling, and yells the louder. He sees his image in the mirror, and so he tries to grasp it. He jerks his thumb out of his mouth, and then he cries because the thumb has gone away. But by and by the child finds out where he begins and where he ends. And in learning the boundaries of his body he also discovers that he is a person—a self—alike and yet distinct from other selves—his mother or his "daddy" or the other persons in the house.

This all-important discovery is loosely linked at first with the child's body. His self, in fact, *is* his entire body. But gradually this self, made up of such experiences as bodily tensions, the sound of his own voice and name, his mirror image, etc., etc., is referred inward. The child comes to regard this total and unique experience that is himself as being somewhere "in-

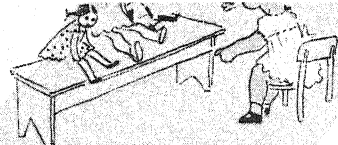
side" the body. And he begins to build an inward world in which this self becomes a central figure—a value; something which it is natural to like in its own right because it is a source of many satisfactions.

Eventually, a well-defined awareness of personal identity appears. The self is placed in a concrete relation to the world—is given a consistent part to play and is expected to live up to it; and in relation to this level each person constantly adjusts his actions and his thoughts. The bully and the martyr; the man of generous impulse; the good housewife, the tough guy, the reformer, the substantial citizen—they are all playing, each his allotted part, in keeping with his notion of his "self."

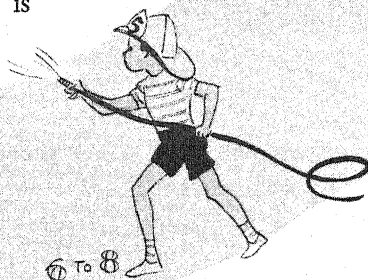
It may be added that for a person to change in mid-career to an entirely different part requires a strong drive. For only a very powerful drive can break through the canalizations established in one's youth. (See page 22.)

Identification — seeing another as oneself

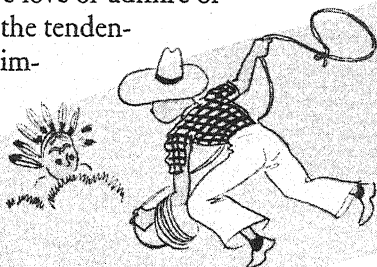
An important factor in the maturing of the "self" is played by what psychologists call *identification*. This is not merely imitation of those we love or admire or envy. It is the tendency to fill an imagined



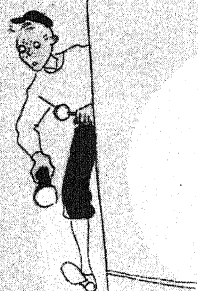
1 to 5



6 to 8



8 to 12



13 to 15

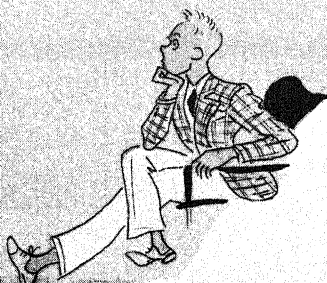


16 to 18

*An Individual Child's
Pattern of Identification.*



19 to 21



22 to 24

place; step, almost literally, into another's shoes. It is because of identification that what is learned early in life leaves such an indelible imprint on one's personality. The child learns not so much by being taught by his parents as by being exposed to them. For during the period of his first identifications, he not only patterns himself after those closest to him; he lets himself flow into their personalities; acts his various parts as if he were really one of them. And it is during this early period that much of the enduring part of his "self" is formed. Identification continues, however, to be important throughout life. Without it, it would be impossible to get the other person's point of view, or merge oneself with the character of a story, or feel loyalty to one's friends or a cause. For loyalty is partly identification, partly canalization—the former as the loyalty of an employee to his company; the latter as the loyalty of a dog to his master. (see p. 22.) Without identification, misfortune would arouse no sympathy; boys would not run away from home to join a circus; dictators would not last.

The Individual's Personality

Is personality the sum total of distinct traits possessed in varying degrees by different individuals—honesty, perseverance, cheerfulness, etc., etc.—traits which, like pieces of a jigsaw puzzle, fit together in a coherent pattern when joined? Is it this total pattern of traits we call personality? and, if such be the case, how many of these traits are inherited, how many acquired?

It seems unwise, says the psychologist, to credit heredity with too overwhelming a role in the formation of adult personality. Heredity in most cases predisposes; environment develops. But since we start with an innate capacity for many forms of response—to sounds, rhythms, colors, foods, smells, etc. etc.; since we grow up in a specific kind of culture, which exerts its particular kind of influence by offering certain satisfactions and by withholding others, is it not likely that our tastes and interests, even our temperament, come to reflect the habits and attitudes around us? A reasonable assumption is that the answer is yes; that conditioning and canalization are at least as important as heredity in making each adult individual what he is.

Thinking of personality as of an addition of character traits is, however, misleading. Though concrete enough as words, such traits are really as ill-defined as the emotions (see p. 36). The same individual, for instance, may be kind and thoughtful with his family, but far from kind to his competitors in business; he may be strictly honest during office hours, yet lacking in integrity at home with his landlord. Apparently personality traits such as these have little meaning unless viewed in relation to each other and to the situation as a whole. They cannot actually be likened to pieces of a jigsaw puzzle. They are much more like the ripples of a small pond: each dependent on the other; each reflecting to some degree all that is happening both on and below the surface.

As its name suggests, Behaviorism is an attempt to take the puzzle out of human nature by explaining all mental processes in terms of physical processes—in terms of the individual's behavior.

The behaviorists, who represent an active and alert group within psychology, base their interpretation of the human organism largely on conditioning (see pages 51-59). The organism, they say, is equipped by nature with a great number of reflex arcs (as discussed in caption on page 12). These reflex arcs are capable of working individually, thus accounting for the simplest units of behavior. But when more complicated behavior is involved, they also work in groups or combinations.

When the organism is born, many different kinds of stimuli at first set off the same reflex arcs, thus producing the same responses. (The infant, for instance, coos or gurgles in response to patting, stroking, rocking, etc.) But as the organism grows, its reflexes, through environmental influences, become so organized that they are elic-

ited by specific stimuli—*conditioned* stimuli.

Thus, if we dislike all bearded men, it is perhaps because the bearded neighbor played clumsily with us as infants. In fact, all of our actions, so the behaviorists assert, are conditioned responses, established at some time or another.

Hence, there is no need for making a mystery of the individual's inner experience, his "mental life." The individual has no mental life distinct from his physical life. All of his processes, including thinking, are simply complicated muscular and glandular responses of the body to external and internal conditioned stimuli.

In early childhood our fear, rage or love is attached by conditioning to specific people, words, things. After learning to talk, (through conditioning) we also learn to talk to ourselves (i. e. to think)—and our inner speech habits touch off all sorts of muscular and emotional reactions which, so the behaviorists say, constitute our outward and visible "personality."

Behaviorism

Conditioning

Gestalt

While many psychologies study the individual personality bit by bit or trait by trait; try to view the individual as the sum of all his characteristics, one kind of psychology, founded in Germany in 1912 and early transplanted to flourish in the United States, proceeds from the opposite direction. It insists on describing not the separate traits of the individual's personality, but the form, the mode of integration or, best of all, the *organization* of these traits. From the German word meaning form (as in "literary form," "musical form," etc.) namely, *Gestalt*, this is called Gestalt psychology.

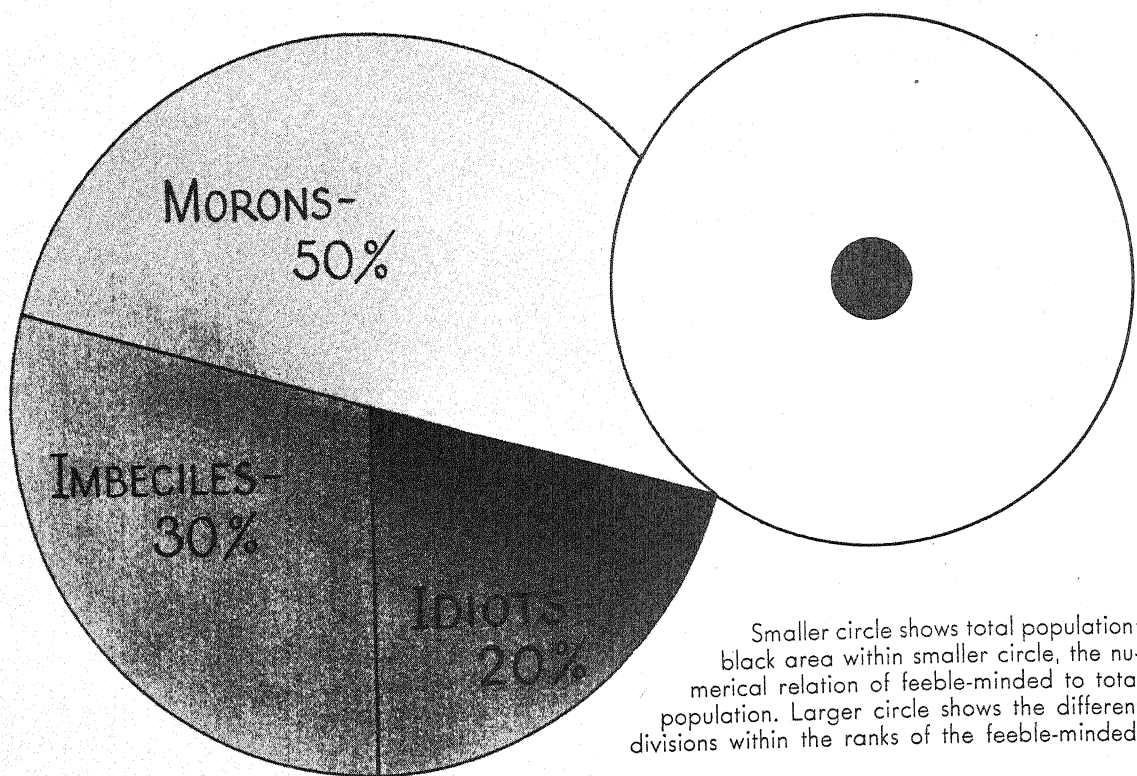
This group early showed that we perceive any new object not by seeing its parts and putting the parts together, but by grasping the organization of these parts from the start; that expression of emotion only with difficulty permits breaking down into separate elements; that learning is not a series of separate conditionings or associations but a reorganization, a total response.

Of course Gestalt psychology has devoted much attention to the study of personality and has stressed the hanging-togetherness, the interdependence of its aspects. In Gestalt experimental work, personality is judged or "sized up" not by piecemeal analysis of voice, eyes, hands, posture, etc., etc.—but by the total impact of the person.

Thus, while the older students of handwriting struggled in a futile way to find piecemeal relations—between a long "t" bar, for instance, and the trait of persistence—the Gestaltist undertakes to match samples of the whole handwriting against typed sketches of whole personalities. He has shown that even the novice can make such matchings considerably better than chance would permit.

Today the Gestaltists are full of ideas about the basic dynamics of all such integration; full of bold plans for verification of such dynamic laws. If there is such a thing as integration (as contrasted with sheer piecing together) they mean to discover its laws.

Organization



Feeble-mindedness

The capacity of social forces to shape personality depends not only on the nature of such forces, but on the raw material that is there for them to shape. Whatever the environmental influences, the individual with poor muscular co-ordination will never make a good surgeon; or the person with defective vision, a good watch-maker. It is likewise impossible for a person inherently incapable of normal mental growth to become a full participant in our society.

Although proper schooling and sympathetic handling usually make some difference in a person's I. Q. (see p. 90), the fact remains that according to typical estimate at least one out of fifty Americans is born with a nervous system that will never develop normally. (Comparable statistics for other countries are not available). The causes of such deficiency have not been fully ascertained, but heredity is emphasized by most

authorities, especially when the defect is severe; inferior brain structure is there from the beginning.

The feeble-minded as a class are not abnormal but *under-normal* individuals. Consequently, no sharp line can be drawn between them and the rest of the population. An arbitrary line is drawn, however for convenience, all persons with an I. Q. of under 70 being considered mentally defective and being subdivided into three classes: the *morons*, (I. Q. 50-69) who are usually able to learn and practice a simple trade and who, though failing in emergencies, are generally able to take care of their own lives; the *imbeciles* (I. Q. 25-49)—generally unable to perform any but the simplest routine tasks; and *idiots* (I. Q. below 25)—completely incapable of taking care of themselves or even guarding against ordinary dangers such as may be involved in crossing streets or handling matches.



Look Magazine

Contradictory pressures make for psychic difficulties

The nervous system is a delicate mechanism which, as in the case of the mentally defective, may not function properly from the start; which, though perfectly sound at first, may also show signs of wear and tear if subjected to a great enough number of disturbing, contradictory pulls. We get a taste of such disturbing pulls long before we are full-grown.

The individual child has had a series of precepts, rules, and admonitions hammered into him. He has been shown by example and by rewards and punishments how to live a good life. Father taught him one thing; mother, a different one; or parents taught him one thing, the teacher perhaps a different one altogether. The very traits that taught him to get along well with his schoolmates in the first grade make him a "sissy" in the fourth grade. The very traits that he sedulously cultivates in the sixth grade to make him a "regular guy" make him uncouth and unacceptable, a "rough neck" when the time comes for interest in girls.

Those who work in daily contact with children find them literally churning with conflicting ideas and strivings; and unfortunately, much of the guidance that is given them is given with relatively little understanding of the child's predicament—of the many diverse patterns which the youngster has learned to respect; of the impossibility of his doing all of the things that he thinks he "ought to do." What is "normal?"—what is "right?"—what is "possible?" Torn and confused by many contradictions, the child needs above all, some coherence, some stability of purpose in his world.

The boy who puts on his first long pants and rushes down excitedly to play with the other kids, soon discovers that his long pants make him stand out from his group—a distinctly unpleasant predicament. He will remember this, and, as he grows older, he will tend to "conform," avoiding anything that might make him conspicuously different from other members of his group. He will in other words, do everything he can to heed the thousands of pressures brought to bear upon him—all tending to make him feel, look, and act like everybody else.

THOU SHALT NOT KILL



Ferenc Csik

The adolescent's dilemmas in our society

It is the adolescent, especially, who seems to catch the brunt of society's conflicting pulls; and these he must not only heed, but also reconcile somehow with his own seething hopes and wishes. Contradictory pressures bear down on him irresistibly and pursue him into manhood and later life. One must strive to succeed, he finds, while being courteous to one's fellow men; while doing unto others as you would they should do unto you. One must fit mechanically into an impersonal scheme of large-scale production, and not be so flattened out as to lose the capacity for affection, sentiment, humor. One must be optimistic, yet avoid being called a Pollyanna; fight for one's rights, but be a good sport.

Under such circumstances inner conflict is universal, and, within limits, normal. At the same time, the adolescent, if he is not to be wrecked by it, desperately needs contact with some rock bottom reality worth trusting, worth living for.



Some Discrepancies between Reality and Ideas instilled in the Young.

P R E C E P T

Consider others before yourself

(Christian ideals held up for guidance: "love thy neighbor as thyself;" "turn the other cheek")

Be always forthright and honest

(Familiar admonitions: "Honesty is the best policy."
"Tell the truth and shame the devil." "As you sow,
so shall you reap.")

Your future lies in your hands — it's up to you to show what you can do

("I am the master of my fate; I am the captain of
my soul"—W. E. Henley; "To R. J. H. B.")

Look before you leap

R E A L I T Y

Push ahead and keep eyes on the goal

(Our society is organized on the basis of dog eat
dog; of thrusting the other fellow aside.)

Be successful by whatever means

(Business conversation: "There is no justification for
the price of . . . a man is entitled to what he can
get.")

The future depends as much on accident as on individual initiative

("You are not even a deck hand on a rudderless
ship"—attributed to Clarence Darrow)

He who hesitates is lost

European





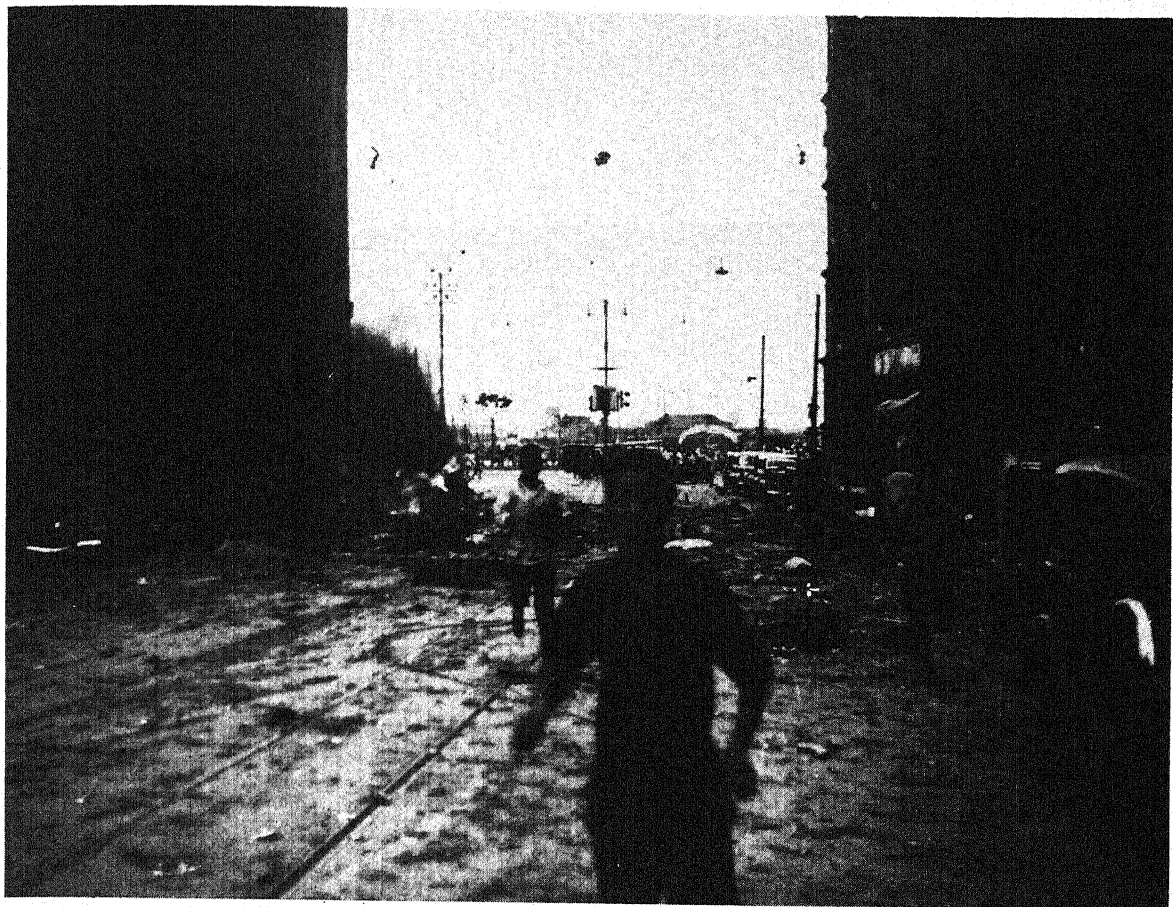
New York—European

Economic Insecurity Money buys life's necessities, but the ramifications of economic insecurity go much deeper than the mere question of eating or going with an empty stomach.

It is about a 50-50 problem whether the adolescent in America today will be able to get work or not; and if he gets it, the chances are pretty large that it will take him many years before he can be sure that it will not slip from his grasp. And while he struggles to get a firm grip on his bread and butter, his economic situation affects almost everything else in his life. It inhibits the development of genuine fellow-feeling toward others—makes, rather, for hostility. For these others are rivals and competitors in

quest of a prize that is limited so all cannot partake. It has been suggested in fact that the striking preponderance of the love theme in radio, movies, etc., may be due in part to this very factor of underlying hostility which makes for emotional isolation with its exaggerated accent on love.

In any event, perhaps, the chief findings today of those who work with adolescents in schools and clinics, or, tragically enough, in courts and prisons, is that these foundlings of a stymied society are harassed and frustrated; that their fears go deep indeed; that their entire emotional existence is colored by an uncertainty which stretches into a future overcast by threats of war and economic defeat.



European

War In the long ages of evolutionary development, impulse and emotion have always been present. The cortex of the brain, upon which thought depends, is a late and hesitant arrival at the feast. We might compare it to an unwelcome guest at a party; tolerated only because somehow he knows how to manage the company; always kicked out as a bothersome interloper when the excitement runs high.

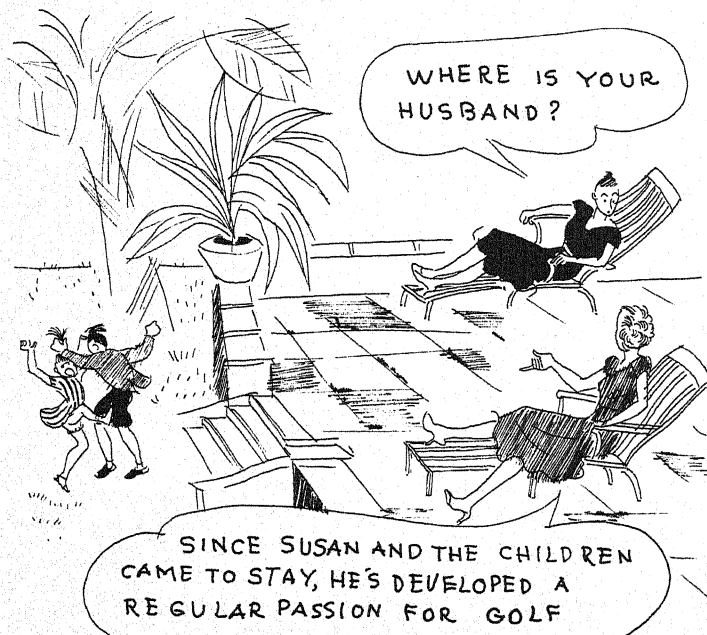
Rational control, as we know, is not always present in man's affairs. It is relinquished in the exultation of election night, in mob forays and lynchings, in the propaganda that precedes a war. But it is during war that man seems to decorticate himself most permanently; that the old thalamus (see page 33) and the pounding

heart take over with most far-reaching consequences. This does not mean that all violence arises through sheer outburst of feeling; rather, it is often definitely planned for "economic" reasons. Men capable of such plans, however, can always count upon the many to rid themselves of the restraining habits which the cortex (see page 12) has with difficulty acquired. In fact, our civilized scruples drop off easily. A public which thirty years ago refused to contemplate horror pictures, finds them daily on the screen and in the press today. It is perhaps that the leading of a civilized life requires sustained and organized effort; that if such a life encounters too many frustrations or fails to carry enough satisfactions, it is the more readily thrown overboard.





Defense mechanism—a device for protecting oneself against reality damaging to one's self-esteem, without losing "face" or appearing to give ground.



Escape mechanism—a device for side-stepping through outright flight reality too painful to bear. This is usually disguised from oneself as a pressing duty or intense interest in something else.

The Neuroses

In a recent experiment rats were placed in a box from which, when hunger driven, they could escape only by jumping against one of two differently marked cards serving as doors. The rats learned that one of the cards, yielding to pressure, always provided an opening for escape; that the other, always meant bumped nose and frustration.

By complicating the procedure, the experimenters introduced chaos into this, to the rats, orderly scheme of things, thus upsetting the animals. After bumping their noses repeatedly, some started hopping strangely, running around in circles, suddenly going limp. Just what had befallen the rats was not clear. But it was plain that their behavior resembled that of persons mentally sick.

This led to the suggestion that perhaps human beings, too, develop mental trouble when they meet with an imperative to action, yet find themselves baffled, with all avenues of conduct seemingly blocked. Such, indeed, may quite conceivably be the case, for the plight of the rats fits in very well with what is known about many forms of mental sickness. Perhaps the most common of these are the *psychoneuroses* (called *neuroses*, for short).

Such disorders, affecting old and young alike, are sufficiently mild to enable the sufferer to understand his problems and to maintain normal relations with other persons; sufficiently acute to torment him,

NOTE: A "phobia" is an unreasonable dread of something or somebody. A "compulsion" is an irresistible impulse to perform some task, often senseless or disagreeable. An "obsession" is a constant compulsory interest which dominates and colors all of one's actions.

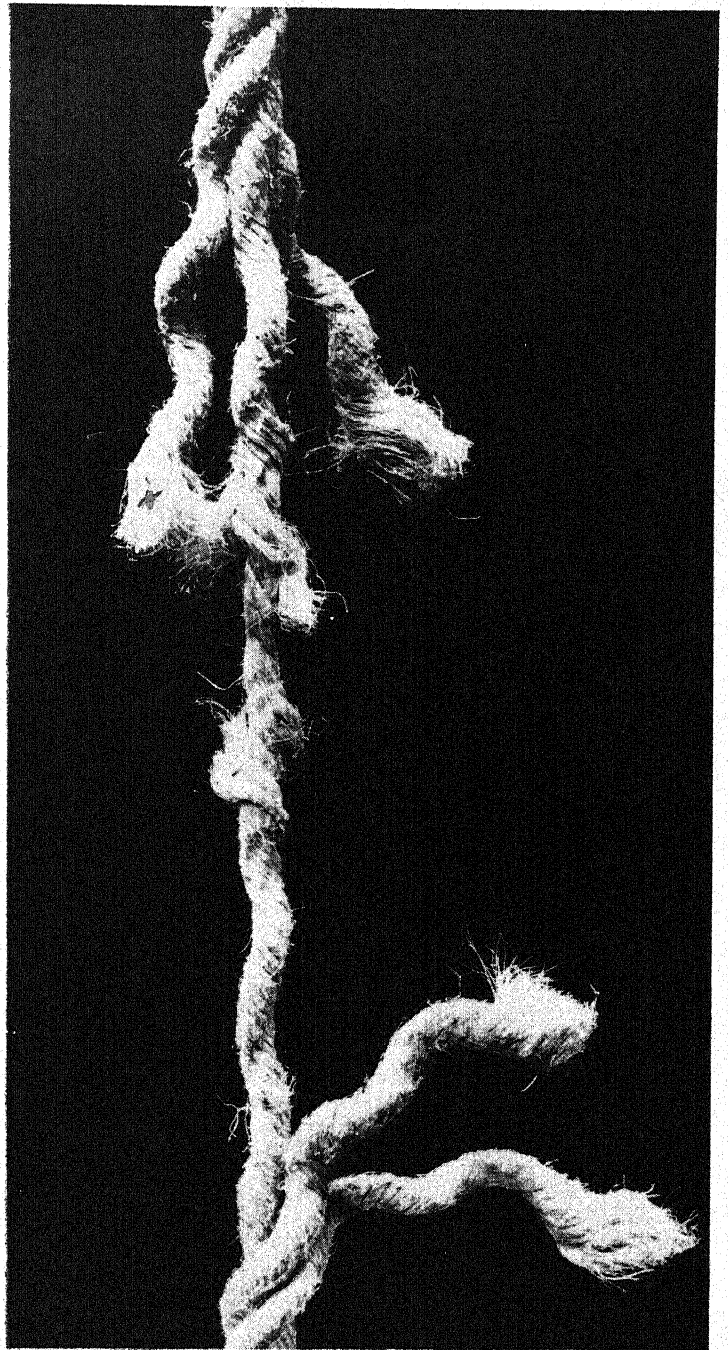
A person may have a fixed idea that he resembles Napoleon, but he is suffering from an obsession if this conviction dominates his daily thinking. If the person yields to his obsession to the extent of constantly acting as if it were true, he is said to have a "delusion." A person with an obsession is merely psychoneurotic; one with a delusion is technically insane.

wear him down physically, and interfere with his life.

The neurotic usually finds himself a prey to a feeling of inadequacy and insecurity; a tendency to delay necessary decisions; an inability to make the best of his opportunities. He may suffer from phobias, compulsions, obsessions, hysteria (see note above). Characteristically, though, the disorder may crop up in the form of physical ailments for which no physical cause can be found. A man, for instance, finds himself, for no apparent reason, unable to sleep at night; his wife develops a paralyzed leg, although the leg is perfectly sound.

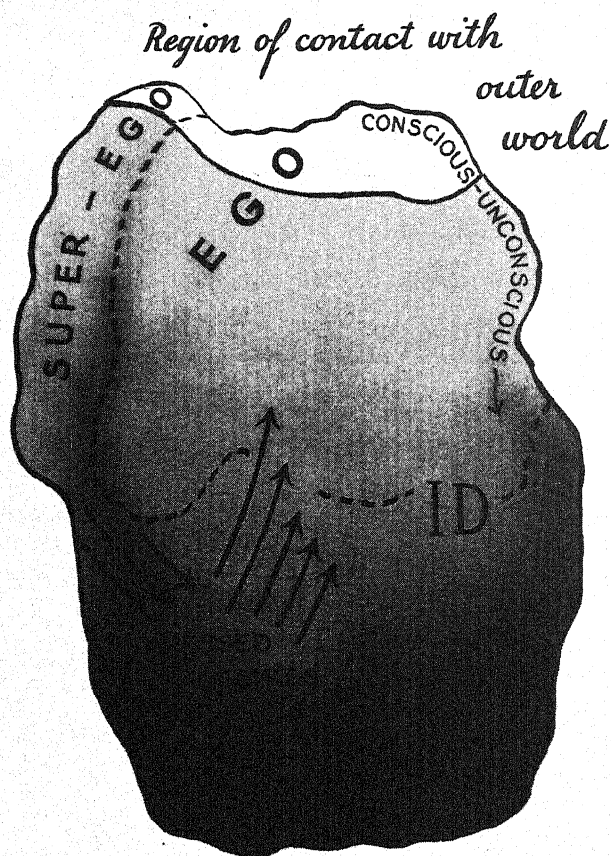
Such mysterious ailments baffled physicians up to about fifty years ago. But with the appearance of medical psychology, including psychoanalysis, penetrating light began to be shed on the subject.

The neurotic, according to the psychoanalysts, suffers from the same conflicts as do the rest of us—but in intensified form. We all employ defenses and escapes in order to side-step unpleasant reality. But the neurotic's whole life is one of camouflaged defenses and escapes. He represents, in fact, a



H. Armstrong Roberts

In a neurosis, which is a mental disorder, not "insanity," the line connecting a person with the rest of the world remains unbroken. Though it may have to withstand severe strain, it does not usually snap.



The impact of Freud's ideas on twentieth century thought has been profound—not only in the social sciences, but in literature, education, the theater, and many other fields. To be credited to Freud are such pioneering concepts as the *Id*, which is the individual's primitive, anti-social, blindly pleasure-seeking tendency (the only "self" of a very young infant); the *Ego*, which is the individual's social self—both personal and rational, both changing and adapting—(a "self" that holds the *Id* at bay and courts approval of the Super-Ego); the *Super-Ego*—experienced by the individual as his conscience; actually, a voice out of the past; (the voice of parents, teachers and other persons of authority with whom the individual had, as a child, identified himself); the *Libido*—mainspring of human strivings, interpreted by Freud as sexual in nature and as responsible for childhood's *Oedipus Complex* (possessive love for one's mother, conflict with one's irate father) and later emotional maladjustments.

Drawing at left modified from Healy, Bronner and Bowers "The Structure and Meaning of Psychoanalysis." By permission of Alfred A. Knopf, publishers.

veritable battleground of conflicting emotions; for within him, out of reach of consciousness, irreconcilable elements struggle for supremacy. In his unconscious, says Freud, the repressed strivings of his *Id* are pitted against the more sober impulses of his *Ego* and the sterner dictates of his *Super-Ego*.

Though the nature of this conflict remains concealed, since memories and thoughts pertaining to the trouble are rigidly kept out of consciousness, the sufferer is worried and tormented. His plight is caused by an unconscious fear lest the strivings of his *Id* break through; and his anxiety becomes so keen that he reaches out frantically after compromise solutions. For he is unable to find peace either by giving in to his

Id (an alternative which his *Ego* won't permit) or by ridding himself of it.

Thus the husband, tired of his wife and anxious but unable to divorce her, develops insomnia—a defense against his fear of yielding to the promptings of his *Id* by murdering his wife at night. The wife, meanwhile, powerless to recapture her husband's affection, yet unable to face this reality, escapes into a world of make-believe by developing a paralyzed leg and thus forcing herself, anyhow, on her husband's attention.

Neither, of course, has the slightest inkling of the real reason for the trouble or the real nature of the situation. Nor is it usually possible for a neurotic to disentangle his affairs without the help of a psychiatrist.

Psychoanalysis

Psychoanalysis is a technique for analysing a person's mental life to cure mental ills. It is also a doctrine based on this technique. Both date back to around 1890, for it was through his work as a physician in Vienna some fifty years ago that Sigmund Freud, founder of psychoanalysis, first became interested in ways of righting sick personalities.

Psychoanalytic treatment consists largely of a long and searching investigation by an analyst of that part of the patient's mental life which goes on below the strata of conscious thought—in a region designated as the “unconscious.”

The patient learns to relax in the presence of the analyst; to communicate to him recent dreams and old memories, gradually recalled. Thus he re-lives emotional episodes that lie at the root of his trouble, directing toward the analyst emotions which played a part in his intimate childhood contacts. Through this method, the analyst is able to discover repressed desires and ideas; and, by helping the patient to become conscious of them, is able to release them and thereby effect a cure.

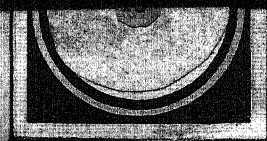
The theory of this treatment is based on the assumption that stored in the unconscious and unknown to the patient are wishes and desires formerly repressed on the ground of their (to the patient) objectionable character. But the individual has not freed himself from thoughts and desires by repressing them. These do not really disappear. They continue to function in the unconscious and unless sublimated, frequently project symbolic representations of themselves into consciousness, thus causing conflict leading to mental and nervous disorders.



To repress is to banish from consciousness that which conflicts with our estimate of ourselves as normal and acceptable members of the community to which we belong.



To sublimite is to re-direct energy belonging to motives that have been repressed, so that this energy can work itself out in ways acceptable to ourselves and society.



Alfred Adler

Psychoanalysis, strictly speaking, denotes the teaching of Freud and his followers only. In popular usage, however, the term has been incorrectly broadened to include the doctrines of Adler, properly known as *Individual Psychology*, as well as those of Jung, properly known as *Analytical Psychology*.

Although both Adler and Jung are greatly indebted to Freud, and though both have used ideas similar to Freud's, each has developed analysis along different lines, enriching it in his own way.

According to Adler, it is not the sexual drive that is the pivoting point of emotional maladjustment—as Freud would have us believe—but the will to power. This will to power is very strong, but its expression is at first constantly thwarted, for we are all born weak and little. Hence, we all begin life with what Adler calls a “primary feeling of inferiority.” To make up for this, we struggle to “compensate,” becoming skillful at something as we grow older, or, failing that, eventually developing into a bluffer or bully. If the only workable way by which we are able to “compensate” successfully is by capitalizing on our feeling of inferiority (“playing sick” and thus commanding attention and sympathy) our condition enters the neurosis stage. Our reaction, says Adler, then becomes a “secondary inferiority feeling” (popularly designated as *inferiority complex*.)

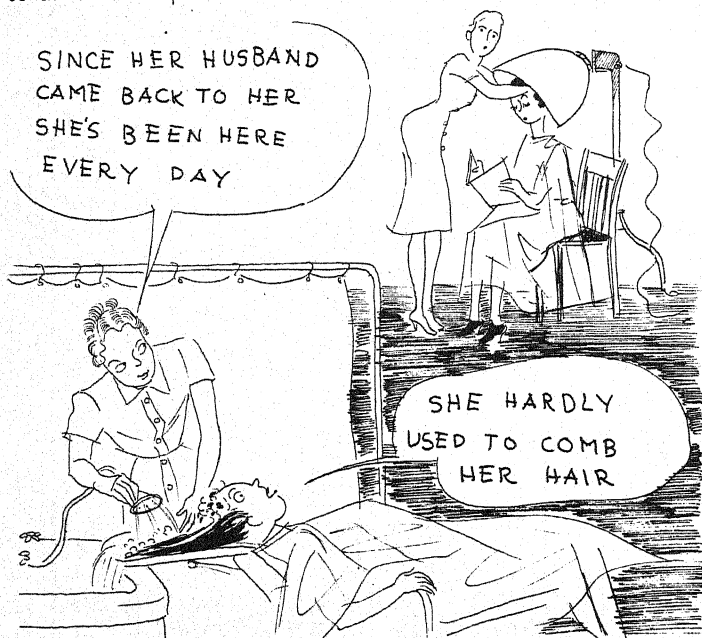
TOO BAD JIM'S
MISSED ALL
THE FUN

YES, BUT HE'S
GRADUATING
CUM LAUDE

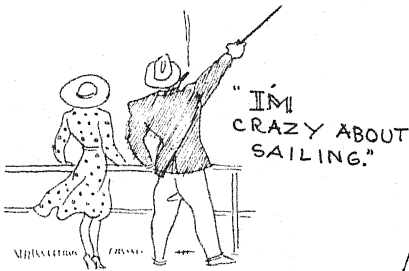
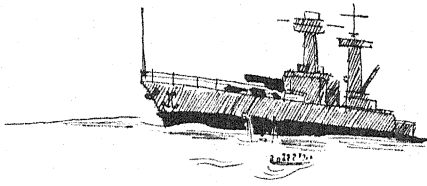


When an individual, through physical disability or loss of status finds himself handicapped in one direction, he will usually struggle so as to make up for it in another. This is known as **compensation**.

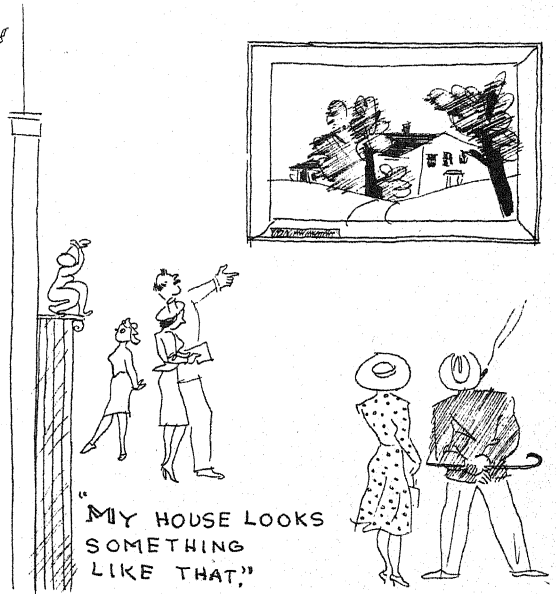
SINCE HER HUSBAND
CAME BACK TO HER
SHE'S BEEN HERE
EVERY DAY



When an individual is impelled to make a fundamental readjustment to eliminate some fault or lack, he may overdo and find himself leaning in the opposite direction. This is known as **over-correction**.



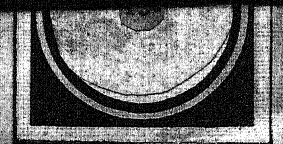
Egocentricity (intense preoccupation with oneself) though common in the little child, may be considered in the adult as an acute form of introversion. It is not to be confused with "egoism" (selfishness), nor with "egotism" (conceit), for the egocentric may be neither selfish nor conceited. His trouble is that he is unable to identify or even to interest himself in happenings outside himself or in other people except insofar as these can be related to his own emotional and mental problems.



Carl G. Jung Like Adler, Jung rejected Freud's view of the "libido" as essentially sexual in nature. Unlike Adler, he advanced, instead, the concept of a universal psychic energy, pulling the individual in two conflicting directions—regressively, toward infantile irresponsibility; progressively, toward mature self-realization. He thus came to broaden Freud's interpretation of the unconscious, emphasizing that it is not merely a storehouse of individual experience, but a repository of attitudes inherited from our ancestors—a "collective racial unconscious." With these manifestly mystic conceptions as tools (for modern science holds that only bodily structures are inheritable, not attitudes) he came to minimize the sexual in explaining mental disorders; was

led more and more to think of a "libido" of mankind rather than that of the individual.

Among Jung's many contributions, one of the most interesting pertains to personality. Observation of the way different people behave in similar situations suggested to him the possible existence of human types, innately distinct: the *introvert*—the retiring-within-himself type; one with a leaning toward brooding and a preference for the world of his own phantasy as against outer reality; and the *extravert*—the reaching-out type; one absorbed in persons and happenings outside himself and little concerned with self-searching and doubt. In relation to this hypothesis, there is, of course, need for caution, for everyone, in point of fact, is introvert in some respects and extravert in others.



Manic-Depressive Psychosis—emotional disturbance, often in early adulthood. Consists of attacks of exaltation (manic phase) or depression (depressive phase) or both, often alternating. In the former, sufferer is over-active, in good spirits, constantly busy, talking continuously. Although retaining fairly good awareness of surroundings, is distractable to a high degree; hence, leaps from subject to subject, creating effect of incoherence. In depressive phase he is under-active; moves, thinks, talks slowly; feels low; may have delusions of guilt, attacks of anxiety. Recovery rate comparatively high.

Involitional Melancholia—a disease resembling the depressive phase of the manic-depressive psychosis, but manifesting itself in late middle age. The disease takes the form of an overpowering sadness of mood combined with physical disorders; e.g. painful digestion, sleeplessness, fatigue, headache. It is usually associated with attacks of profound despair (at which point the patient often becomes dangerous to himself, tending to suicide); also, with a variety of pessimistic delusions. Hammering, f. i., is interpreted by the sufferer as the building of a coffin for him. Recoveries are not unusual.

The Psychoses

Medically, the word "insanity" is generally avoided. The word, as popularly understood, means "opposite of sanity"—but in the light of current knowledge, a person mentally afflicted does not differ from the "sane" as night differs from day. Rather, he differs

from him merely in degree—just as two individuals, one walking, the other running, differ in the intensity of their responses. The mental patient, in other words, displays the same characteristic traits as do the rest of us; but the manifestation of these traits assumes a different emphasis; (and where the line is to be drawn between "sane" and "insane" is hard to tell). Currently, therefore, mental disturbances are classified either as *psychoneuroses*, embracing relatively mild mental disorders (see p. 106); or as *psychoses*, embracing the various types of "insanity." For convenience, the latter are subdivided into two groups: *organic* (when traceable to some physical cause); *functional* (when not produced by any known physical agent). In the former group we find disorders due to injury, as from a blow on the head, or to destruction of brain

tissue, or to a tumor; also, the devastating "general paresis," due to syphilitic infection; the baffling "encephalitis" or sleeping sickness, due also to infection; the various alcoholic and old age psychoses; and others. In the functional group there are also many kinds of disorders. Four of the most important of these conditions are very briefly sketched in the shaded areas of this page.

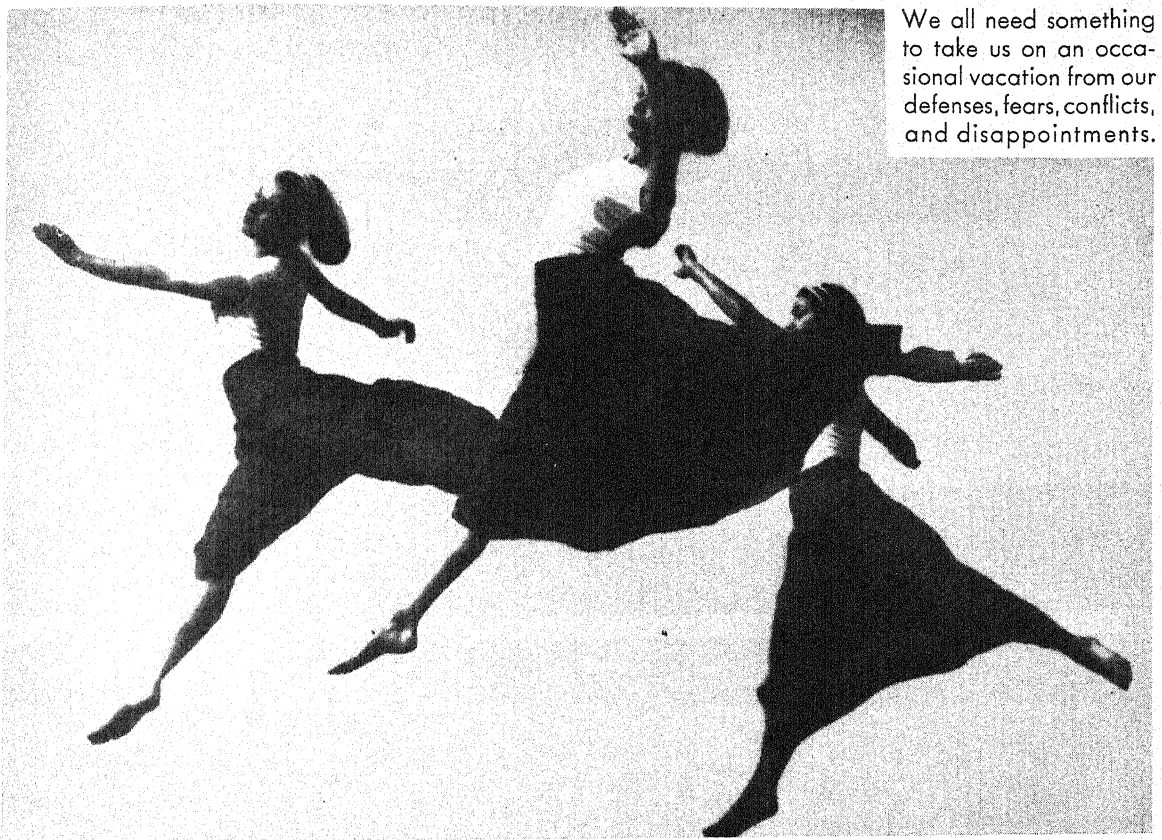
Schizophrenia (also called Dementia Praecox) — most prevalent of all psychoses. Manifests itself in a splitting of personality, the sufferer's dream world becoming his reality — somewhat in the manner of theater

spectator who, bored yet unable to leave his seat, retreats from it all into his inner world. Disease usually linked with delusions and deterioration of intelligence. Some authorities think schizophrenia, like manic-depressive condition, may be traceable to heredity, not actually dooming but predisposing offspring. Recovery rate low. References (p. 117) consider ways of arresting such trends.

Paranoia — rare mental disease. Occurs chiefly during middle age—more often in men than women, the single than the married. Comprises highest social group with best schooling of all psychosis patients.

While otherwise preserving full contact with his environment and undergoing no deterioration of intellectual faculties, sufferer manifests grotesque delusions (e.g. of persecution) linked with exaggerated suspiciousness, sullen reticence, ingenious methods of defense against imaginary enemies whose handiwork is everywhere. The disease grows imperceptibly; is difficult to diagnose early.

We all need something to take us on an occasional vacation from our defenses, fears, conflicts, and disappointments.



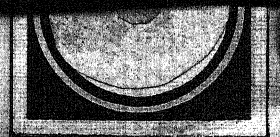
Victor Von Pribosic

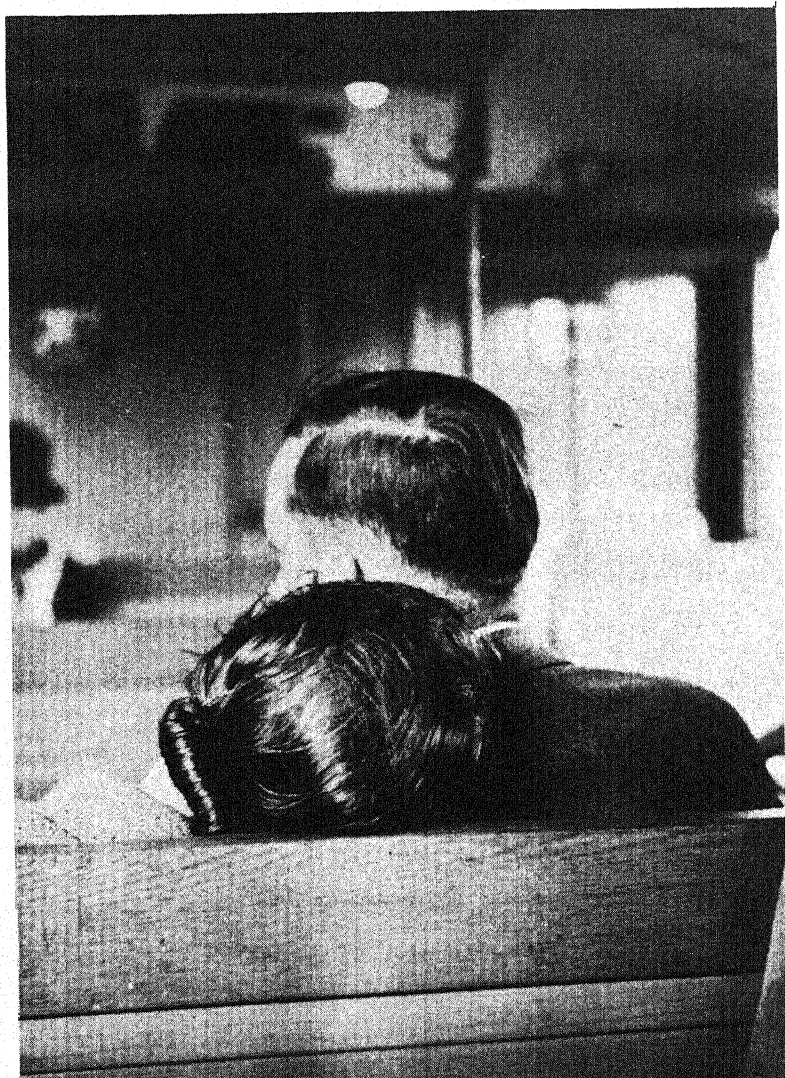
Self-Discovery Every piece of machinery is built to withstand a certain amount of friction. But this does not mean that sand can be freely sprinkled among the parts of an engine, and the engine still be expected to run normally. In this respect the human machine is very similar to the mechanical machine. It is built to withstand a good deal of friction, but let the strains and stresses that bear upon it become too intense or last too long, and a crack-up—a neurosis or psychosis—almost inevitably results.

In recognition of this, psychiatrists today seek as much to prevent mental sickness as to cure it. They strive mightily to keep tottering personalities from falling apart; to lead them gently toward a better integration and a greater self-knowledge; to help them, in short, per-

ceive something to live for outside themselves. In this, indeed, they touch upon an important way through which some measure of happiness may be achieved. We might call it "self-discovery," for it is the process of finding oneself—finding not only what one enjoys and likes, but, also, what one can enjoy and like without foreboding and doubt. It makes no difference what it is, whether a hobby or artistic endeavor, an interest, a vocation, or a working together with others for some "higher" cause.

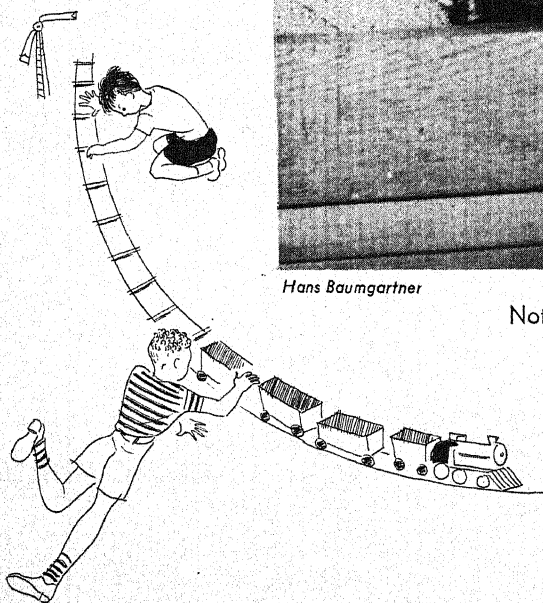
Any group activity that enables one to see through other people's eyes also enlarges one's understanding of oneself. Any endeavor that extends one's range of potential satisfactions makes for a "saner" life. For if frustrated in one direction, the individual can then turn in another instead of being completely stuck.



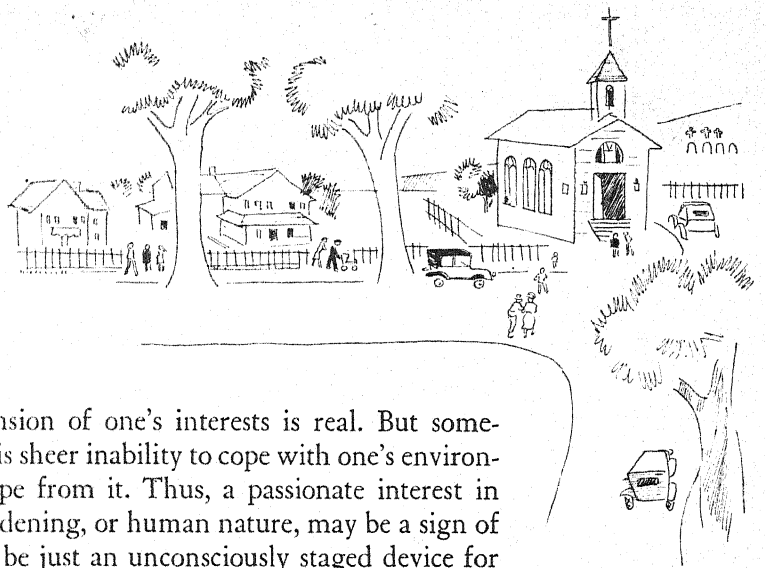


Hans Baumgartner

Not only leaning but supporting; not only taking
but sharing; not merely living but maturing
together — that's marriage at its best.

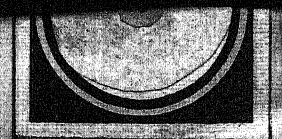
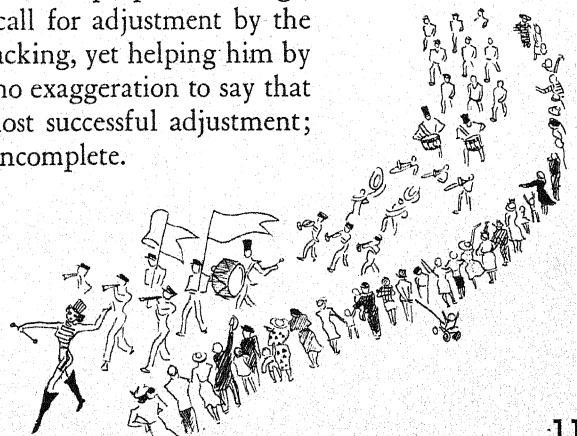


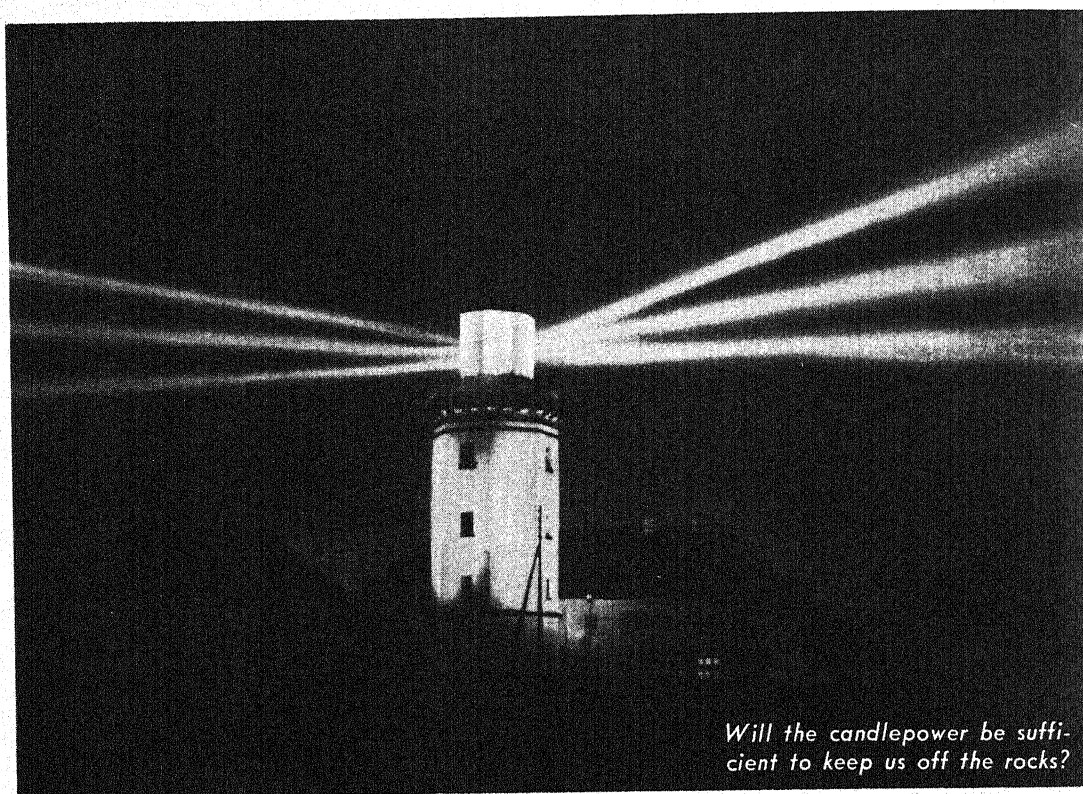
Marriage Children Friendship Community



Sometimes the expansion of one's interests is real. But sometimes what passes for it is sheer inability to cope with one's environment—merely an escape from it. Thus, a passionate interest in stamp collecting, or gardening, or human nature, may be a sign of health. But it may also be just an unconsciously staged device for not facing oneself, one's world, or one's responsibilities. It is not without basis that light romantic and detective fiction has been called "escape literature;" not without reason that the reading of this type of fiction is often linked with maladjustment.

This inability on the part of the individual to achieve a sense of "at-oneness" with his environment need not necessarily imply "less ability" or "less intelligence" than that of others in his world. A child, for instance, too far beyond his schoolmates in ability or intelligence may suffer as grave results from maladjustment (through his inability to descend to their level) as the child who with less intelligence than his group struggles to keep up with them. What maladjustment implies is not the absence of something but the presence within the individual of a deep-rooted conflict. It is this conflict that creates in him a feeling of being "out of step;" acts as a damper on his happiness. For happiness is always more substantial, more enduring, when based on some measure of harmonious relations with one's world. The vital and important relationships that are really satisfying to most people—marriage, children, friendship, community—all call for adjustment by the individual, penalizing him when it is lacking, yet helping him by coaxing him into it. It seems therefore no exaggeration to say that social compatibility is at the root of most successful adjustment; that without it, the individual's life is incomplete.





Will the candlepower be sufficient to keep us off the rocks?

Carl Johan Jorgensen

What of the future? Throughout this book has run a consistent theme. Adjustment, we have said, is the individual's major problem. Let him achieve some measure of harmony with his environment, and the rest will take care of itself. He will live contentedly if not always happily; sanely if not always excitingly.

This is all probably true, but it does not tell the whole story. Adjustment by the individual, however desirable, is, in itself, insufficient. It cannot be the ideal of an advanced civilization, a civilization which has spent the last hundred years studying and conquering a physical world. There still remains the task of studying the social world—of bringing it, too, under control. This is important. For

though we have succeeded in developing mechanical robots potentially capable of fulfilling the physical needs of all mankind, we have not been so fortunate in conditioning man in the ways of mature social living. And human nature may turn on us some day, wrecking our robots, and with them, our hopes. For we still can't control the predatory and anti-social in man. We still don't know enough about him to create a lasting commonwealth based on good-will and cooperation, on mutual understanding and mutual respect. Lacking this knowledge, however, progress is illusory. Without it we are not on firm ground. We face dangers ahead—there, in the dark, where the science of man, like a flickering light, points the way.

SUGGESTED

FOR MORE OR LESS CASUAL READING

Human Personality and the Environment

by C. M. Campbell

Interaction of organic factors and environmental pressures from a medical man's view. ('34; Macmillan; \$3)

The Psychologist at Work

by M. R. Harrower

A brief account of laboratory psychology. ('35; Harper; \$1)

The Tides of Life

by R. G. Hoskins

A popular account of the glands of internal secretion. ('33; Norton; \$3.50)

The Wisdom of the Body

by W. B. Cannon

Bodily factors in drive and in the maintenance of equilibrium with the environment. ('32; Norton; \$3.50)

The Science of Life (Part IV)

by H. G. Wells, J. Huxley, G. R. Wells

A clear elementary view, interestingly presented, of the mechanism of heredity. ('34; Doubleday; \$3.75)

Creative Imagination

by June Downey

A study of the role of association in literary and artistic achievement. ('29; Harcourt; \$3.75)

Outline of Abnormal Psychology

A symposium on common mental defects and disorders. (No. 152; Modern Library; 95c)

Outline of Psychoanalysis

A symposium of papers on Freudian and related contributions. (No. 66; Modern Library; 95c)

Seven Psychologies

by Edna Heidbreder

A comparison of some of the outstanding current "systems" of psychology—behaviorist, Gestalt, etc. ('33; Appleton; \$3)

FOR MORE CONCENTRATED READING

The Psychology of Learning

by E. R. Guthrie

Emphasizes the conditioned response as a clue to habit formation. ('35; Harper; \$1.50)

The Psychology of Human Conflict

by E. R. Guthrie

Shows that opposing motives, manifest or concealed, lie at the root of nervous or "abnormal" behavior. ('38; Harper; \$2.75)

Social Psychology

by D. Katz and R. L. Schanck

Laws of group behavior with special emphasis in economic backgrounds. ('38; Wiley; \$3.75)

Remembering

by F. C. Bartlett

Shows how social attitudes, instilled by the environment, influence what we perceive and remember. ('32; Macmillan; \$5)

The Psychology of Personality

by R. Stagner

Surveys, experimental and clinical studies, personality tests, etc., with emphasis on the family and social environment. ('37; McGraw-Hill; \$3.50)

Personality; a psychological interpretation

by G. W. Allport

Undertakes to integrate literary, historical, philosophical and experimental data to show the uniqueness of each personality. ('37; Holt; \$3.50)

New Ways in Psychoanalysis

by Karen Horney

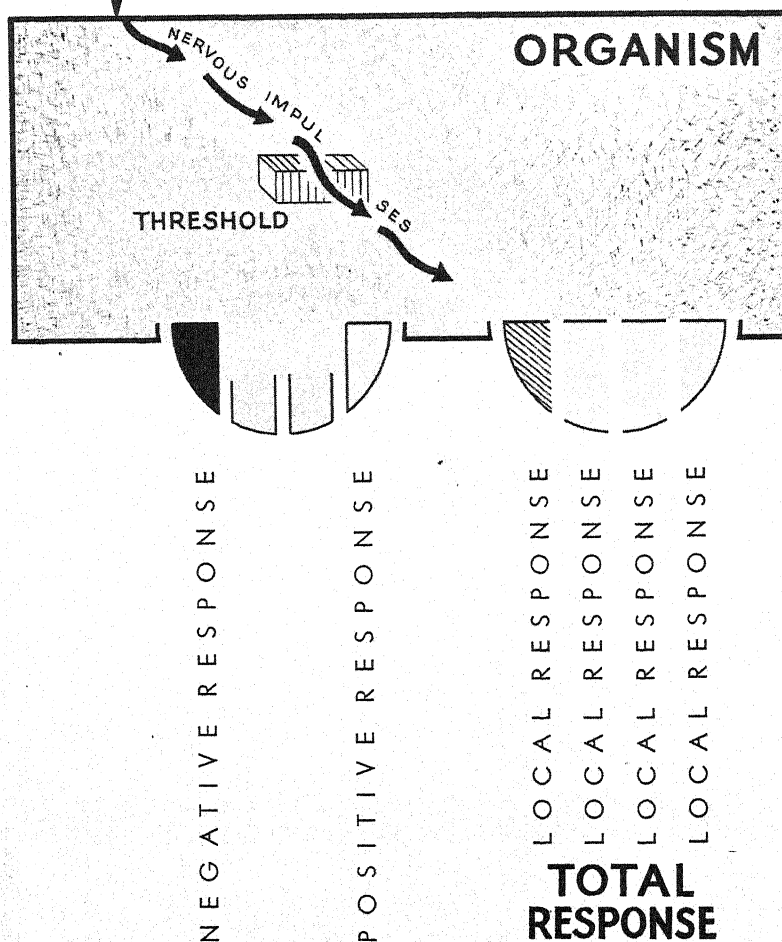
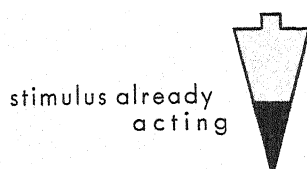
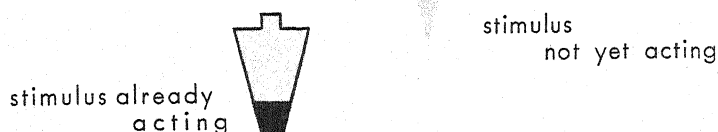
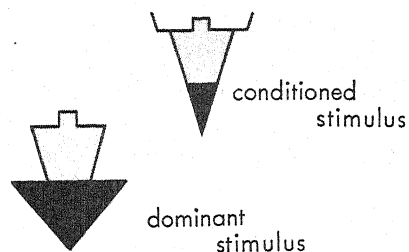
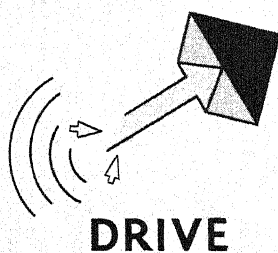
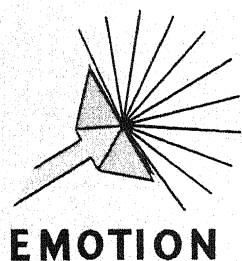
Shows current trends away from Freud; emphasizes the pressures from the environment. ('39; Norton; \$3.50)

A Student's Dictionary of Psychological Terms

by H. B. English

A handy volume of terms used in psychological writings. ('38; Harper; paper, 90c; cloth, \$1.25)

GLOSSARY OF SYMBOLS



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